Telephony The Journal of the Telephone Industry

Volume 114 JANUARY 29, 1938 Number 5

Is Cord Inspection *A Daily Routine* In Your Exchange?

By RAY BLAIN

CONSISTENTLY-SATISFACTORY SERVICE depends to considerable extent upon regular inspection and maintenance of switchboard cords. A cord giving satisfactory service today may be the means of rendering imperfect service to a number of subscribers tomorrow. . . . Various methods of repairing cords; their merits and shortcomings. With proper tools cord repair is not a particularly difficult task. . . . Solderless cord tip appears ideal methods of cord repair. New tool uses lever-operated cam for connecting solderless tip to tinsel conductors

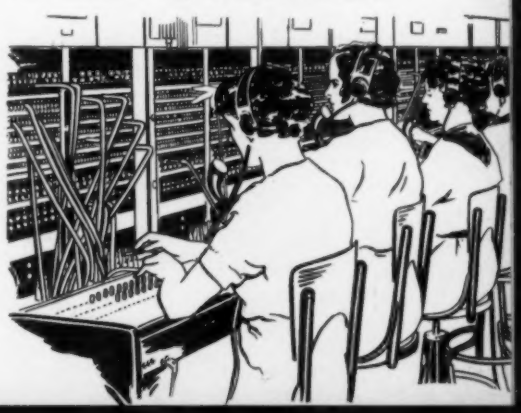
CAREFUL maintenance of switchboard cords is a duty which should never be neglected in any telephone exchange, be it large or small. A noisy or defective cord, left in service on a switchboard for even a short period of time, may cause trouble to be reported on several different telephones.

Proper investigation of these false reports always costs a great deal more than the most careful cord maintenance. Added to this, good cord maintenance provides a better grade of service and a greater number of satisfied customers at all times. This always contributes to the general good will of a telephone company in any community.

The normal wear on switchboard cords is usually first noticed on the outer braid at a point near where the cord enters the plug. It is at this point that a cord receives the greatest amount of sharp bending. Extended use of a cord, after this outer braid wear is noticed, generally results in damage to the tinsel strands of the conductors.

It is not uncommon to see cords in service with the outer braid worn entirely through at the base of the plug and slipped back on the cord so as to catch in the plug seat. Sometimes this outer braid wear is repaired with a wrapping of twine or thread.

This condition should not be permitted to exist. Wear on the outer braid should be taken as a danger signal and a warning that the cord is weakening and repairs should be made immediately before actual trouble occurs. Actual trouble may follow soon after the breaking of the outer braid on any switchboard cord.



Several different methods of cord repair are in more or less general use today. These methods can all be considered good if performed in a workmanlike manner. The method used in the old days was to solder the metal cord tips to the tinsel of the repaired cord and bind the insulation down with thread.

This method did not ordinarily give complete satisfaction, for the heat from the soldering often made the tinsel brittle and caused it to break completely off at the edge of the cord tip. It is quite true that tinsel can be successfully soldered to metal tips but extreme care is always necessary. The average switchboard man is not always qualified to solder tips on repaired cords with a speed numerous companies in many sections of the country, an attempt will be made to describe its use in detail (as shown diagrammatically in an accompanying illustration).

First, take the plug from the defective cord by removing all plug screws and unscrewing the plug from the cord. (A)

Next cut the cord with pliers at the center of the worn spot, which is usually about ⅜ths of an inch from the end of the plug. (B)

Remove the outer braid for a distance of about 1½ inches by cutting around the cord with a sharp knife and removing the outer braid. Sometimes it may also prove desirable to slit the outer braid lengthwise to make its removal easier. (C)

two or three inches back from the plug, the cord has a tendency to become stiff and hence difficult for the operators to use on a busy switchboard. (F)

Bend back the bared conductor over the outer braid and screw on the plug. Cut off the sleeve conductor at the base of the plug and give the plug about two more turns to cover the ends of the tinsel. The plug should come to rest in a position that leaves the ring conductor directly under the tip conductor. (G)

Remove the outer braid insulation from the tip and ring conductors with a sharp knife or diagonal-cutting pliers. The inner threadlike wrapping insulation should be left on the tinsel to bind it together. The

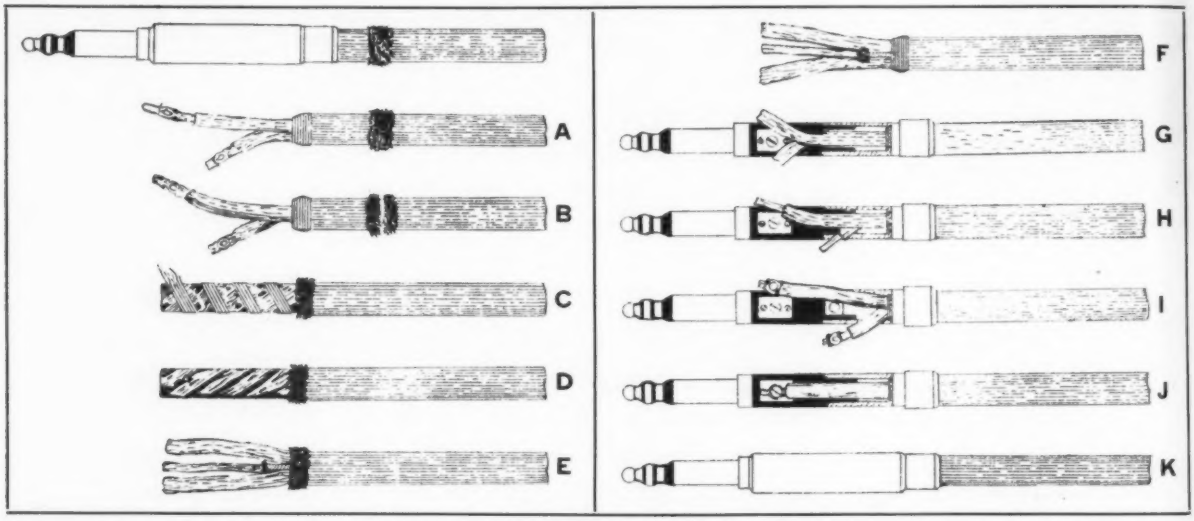


Diagram showing step-by-step operations involved in rebutting a switchboard cord. This is done by means of piercing the insulation with a special tool for inserting the plug screw.

necessary to make this method desirable from an economic standpoint.

The next method tried was to bind the end of the tinsel with No. 28 bare tinned copper wire, which was then placed under the plug binding screw. This wire was given a special binding, self-locking hitch which gripped the tinsel firmly. About this time we also tried to bind the actual tinsel under the plug screw, but this method never gave satisfactory service. The wire hitch did work fairly well but was always a rather slow and difficult operation to perform.

A later development—and generally considered an improvement—was that of piercing the tinsel conductor and part of the insulation with a special tool and inserting the plug screw in the hole. As this method is still in general use by

Care should always be exercised to avoid cutting too deep and causing injury to the conductors. A special tool, which consists of a guard with a safety razor blade clamped in place, can be conveniently used for this purpose. This tool speeds up the work and eliminates, to a great extent, the possibility of causing injury to the conductors. (D)

Remove all cotton binding tape and cut away filler cords.

Remove all insulation from the sleeve conductor with diagonal pliers, for a distance of about ½-inch from the first cut. (E)

Bind the outer braid at the cut with strong thread or three-cord lockstitch. The binding can frequently be eliminated if the cord is first dipped in heated beeswax. Only the end of the cord should be dipped in the wax. If dipped more than

outer insulation should be carefully removed so as to fit the spacing of the plug screws. (H)

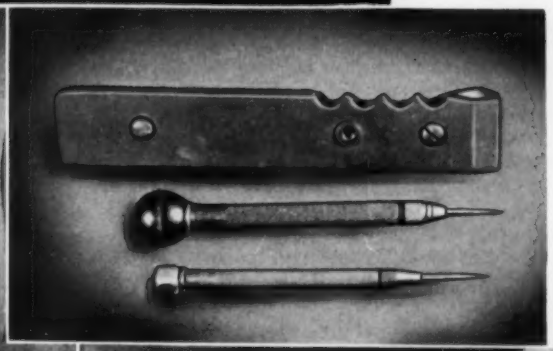
Flatten the tinsel conductors slightly at the screw holes with a pair of long-nose pliers. Now pierce the conductors directly over the screw holes with a special tool provided for this purpose, or with a sharp-pointed awl. The tool should be worked back and forth through the tinsel until a clean hole of the proper size has been opened. (I)

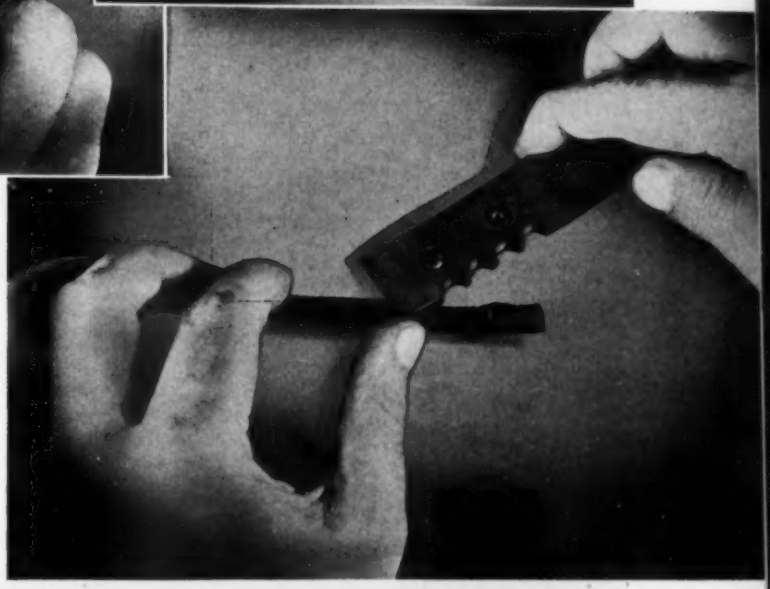
Place binding screws in the holes of the tinsel conductors and plugs and turn down firmly into place with a suitable screw driver. Cut off the ends of the conductors about ⅛th inch from the screw heads. If the conductors are cut off closer to screws than this, the binder wrappings of insulation will ravel, permitting the tinsel conductors to

New type cord tip placed on cord without removing any of the insulation. One on right shows how tip folds together. Three in center are tips before installing and one on left shows tip installed on conductor. →

The braid cutter, plunger-type screw driver and conductor-piercing tool are all most useful in the repair of switchboard cords.

↓



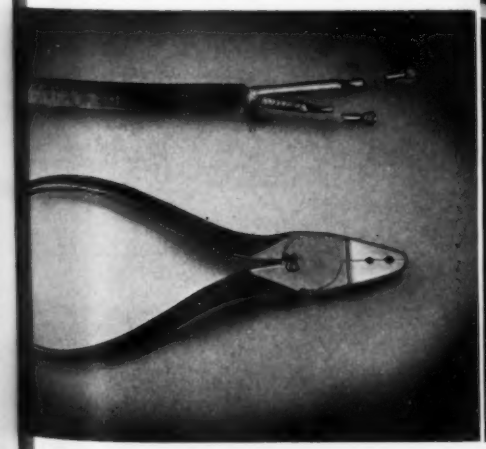


The braid-cutting tool (above) can be used to advantage when cutting around the cord to prevent injury to the conductors.

The braid cutter and stripping tool (right) which utilizes a razor blade is inexpensive and does a much better job than an ordinary knife.

The solderless cord tip (below) is now coming into general use and favor and appears to be the ideal method of cord repair.

One method is to crimp cord tips into contact with the tinsel conductors with special pliers (lower right).



spread and work out from beneath the binding screws. (J)

Replacing the outer shell on the plug completes the operation. (K)

After being repaired by this method cords should be tested for defects before any are placed in service on busy switchboard. Care should always be exercised to avoid reuse of plug binding screws with worn threads or other defects, as they will not maintain a good contact between the conductors and the plug. Plug screws are inexpensive and it is always a good plan to keep a few hundred extra on hand at all times.

The solderless cord tip is now coming into general use and favor and appears to be the ideal method of cord repair. Special, soft-metal terminals or tips may be purchased at a very low cost. The ends of the conductors are bared in a manner somewhat similar to that previously described and the prepared metal tips set in place. With this method it is necessary to remove both the outer and inner insulation from the ends of the conductors and set the metal tip in direct contact with the tinsel.

One method is to crimp these clips into contact with the tinsel conductors by utilizing a special pair of pliers. These pliers are equipped with two grooves, one slightly larger than the other. The shank of the cord tip is first mashed down and shaped around the tinsel with the larger groove. It is then placed in the smaller groove and gripped firmly, which mashed it into close contact with the tinsel conductor.

It may be necessary to repeat this last operation several times before a complete and smooth job is obtained. Little practice is necessary to learn this operation so that a good job may be done easily and quickly. The outer braid of the conductors may be worked down over the shank of the cord tip if desired, which prevents possible short-circuiting of the tip and ring contacts of the cord.

When the shorter tip is used, this operation is not generally considered necessary. If the wax treatment is used, a thread binder around the insulation at the base of the cord tip is also usually eliminated.

There has recently been developed a special tool which makes use of a lever-operated cam for connecting the solderless cord tips to the tinsel conductors. These tips are placed on the conductors without removing any of the insulation.

They are provided with two sharp points which pierce the insulation and make positive contact with the tinsel. These points pierce the conductor directly in the center and the metal wraps around the outer insulation. The ends of the clip butt together with two notches which fit evenly. These clips, when properly installed, grip the conductor firmly and make positive contact with the tinsel.

The lever which operates the tool used for the installation of these clips is fairly long, which, when operated rapidly, gives it an action somewhat like a flywheel. It has been estimated that this tool exerts a pressure of approximately 1,000 pounds on the connection.

A jig is provided on top of the tool for use in cutting off the conductors at the proper point so that the cord tips will fit the cord binding screws accurately.

It is a peculiar fact that most switchboard maintenance men consider cord repairs as their most difficult task. It is quite true that this ordinarily simple task is often made more difficult due to the lack of proper tools. No matter which

The special tip installer, with long handle; plugging fixture, with short handle; and clamping type braid remover—all installed on a special cord table equipped with casters so that it may be rolled along a large switchboard. →

The special lever-operated cam for connecting the special cord tip to the cord without removing insulation. Note jig on top which is used to cut conductors to the proper length. ↓

method of cord repair is preferred and used, proper and necessary tools should always be provided, if a good job is expected.

The braid cutter and stripping tool which utilizes a razor blade is inexpensive and does a much better job than an ordinary knife. It is surprising how much this little tool will speed-up cord repair work on any switchboard. A more expensive tool which utilizes a clamping arrangement may also be purchased to perform the job of outer braid cutting if desired.

A crank-operated plugging tool with a vise arrangement for holding the plug while it is being screwed onto the cord, is always a big help. Of course, a pair of pliers can be, and frequently is, used for this purpose but cannot be considered satisfactory. The pliers are slow and cumbersome to use and often cause injury to the expensive plugs. The plugging tool does a good quick job and never damages the plugs in any way.

A pair of special pliers with a round, smooth hole in the center of the jaws, is also most useful in smoothing down the braid, which permits the plug threads to start on the cord with greater ease. This tool also often has a smaller hole which can be used to hold the cord while the plug is being screwed in place. If properly used this tool often prevents damage to the outer braid of the cord while installing a tight-fitting plug.

Perhaps the most useful cord tool of all is the special plunger-type screw driver. The plug screws have a hole in the center which fits over the plunger of the screw driver. The plunger is tapered and extends through the screw and the cord tip into the screw hole in the plug. With everything lined-up in this manner, the screw driver can be pushed down to engage the screw head and turn it into place. This special tool avoids fumbling and dropping of the small screws with a waste of time and disposition.

We sometimes hear the complaint that the expected life is not being obtained from switchboard cords in a certain exchange, and then find that the cords are not being rebutted at necessary intervals. How anyone expects to obtain maximum life and service from the best switchboard cord in the world without periodic rebutting is just another of the unsolved mysteries of the telephone business.

Switchboard cords are made to be rebutted and a special reinforced section is provided for this purpose. Cords may ordinarily be cut back or rebutted until this entire reinforced section is completely used.

Some troublemen repair cords without removing them from the switchboard. This always saves considerable work and time. When this system is used, a special cord table on wheels with all the large cord tools mounted on top can be used to advantage. These cord tables are also generally equipped with a drawer to accommodate small repair parts, plugs and hand tools.

When rebutting is to be done at the switchboard, cords when first installed should have the cord weights placed within about one inch of the floor or bottom of switchboard. This permits the cords to be rebutted several times before they must be lengthened.

On large switchboards the night switchboard man or a special cord man generally repairs or replaces all worn cords nightly. In some of the smaller exchanges where a regular switchboard man is not kept on duty at all times, there is usually a tendency to let worn cords accumulate until a large number are in, or rather out of, service on the switchboard.

A good method to prevent this is to take a few minutes the first thing each morning and replace all worn cords. When this rule is observed regularly, the job does not seem near as big as when they are permitted to accumulate, and a better grade of service is always assured.

The proper maintenance of the all important switchboard cords is really not a difficult task if approached in the right manner. Manufacturers have made wonderful progress in the perfection of switchboard cords, and the cords now last many times longer than was even dreamed of in the old days. The investment in proper tools and the observance of proper methods in order to obtain the maximum expected life from these present-day excellent cords, will always prove worthwhile.

COMING CONVENTIONS

Texas Telephone Association, Adolphus Hotel, Dallas, March 23, 24 and 25.

Oklahoma Telephone Association, Huckins Hotel, Oklahoma City, March 29 and 30.

Missouri Telephone Association, Hotel Muehlebach, Kansas City, April 4 and 5.

Iowa Independent Telephone Association, Fort Des Moines Hotel, Des Moines, April 12, 13 and 14.

Nebraska Telephone Association, Hotel Paxton, Omaha, April 19 and 20.

Kansas Telephone Association, Hotel Kansan, Topeka, April 27 and 28.

Ohio Independent Telephone Association, Deshler-Wallick Hotel, Columbus, May 3, 4 and 5.

Indiana Telephone Association, Claypool Hotel, Indianapolis, May 11 and 12.

Wisconsin State Telephone Association and Wisconsin Locally Owned Telephone Group, Park Hotel, Madison, May 17-19.

Pennsylvania State Telephone & Traffic Association, Yorktowne Hotel, York, June 2, 3 and 4.

New York State Telephone Association, Seneca Hotel, Rochester, June 7, 8 and 9.

The Illinois Telephone Association, Hotel Pere Marquette, Peoria, September 21, 22 and 23.

Virginia Companies Have Successful Year

The Central Electric & Telephone Co. (Southeast division) and the Virginia Telephone & Telegraph Co., with headquarters in Charlottesville, Va., recently completed their most successful year in station development. On December 20, 1937, the division had 19,274 stations in operation, a net gain of 7.6 per cent over the preceding year. The 1936 gain was 6.2 per cent; 1935, 4.5 per cent; 1934, 3.2 per cent; 1933, 3.2 per cent, and 1932, .9 per cent loss.

The objective set for the current year is a net gain of approximately 771 stations, with an anticipated total, as of December 20, 1938, of 20,045 telephones. No special sales drive was conducted during the past year, nor is any planned for the current year. However, the division expects to continue to place emphasis on telephone sales effort by every employe throughout its territory.

The Charlottesville group, of which Chas. C. Ward is manager, was the winner of the McGraw trophy for attaining the best percentage of its station gain quota. This group finished the year with a net gain of 480 stations, or 9.4 per cent. This represents 155.3 per cent of its 1937 quota. This trophy has been awarded annually since 1932 and was established by Max McGraw, president of the company.

Nelson Mahone, commercial manager at Charlottesville, was the winner of the individual sales trophy, with 1,023 sales points to his credit.

In the Nation's Capital

By FRANCIS X. WELCH

Special Washington, D. C., Correspondent for TELEPHONY

LACK OF VITAL NEWS from Washington explained in comments concerning the Senate's filibuster against the lynching bill. . . . Progress of the controversy regarding Association of Western Union Employes should be watched closely as organization is similar to independently-organized groups in telephone field functioning as bargaining agents. . . . Talk of Western Union-Postal Telegraph merger heard rather frequently

"WHAT'S a four-letter word for a small boat?" Nobody answered the inquirer, whose tone did not convey much enthusiasm about his own question. He was the Washington correspondent for a New England paper and the scene was the Senate press gallery.

Only a half-dozen reporters were on hand. One was asleep; two were arguing over a Racing Form. Another, unless these failing eyes deceive their owner, was sketching a very uncomplimentary cartoon of Ellison D. Smith, United States Senator from South Carolina, who at that particular moment was positively the only other Senator on the floor beside the presiding officer (who was manicuring his nails) and the speaker (who was quoting extensively from a very dull book about Hawaii).

Several other Senators had just gone out into the antechamber to greet some visiting constituents. Most of the Senators were in their offices across the plaza, catching up on their mail. The only reason why this writer had come into such an uninteresting place at such a time was to get out of a rainy squall which blew up while he was walking between the House and Senate office buildings.

We had rather dirty weather in Washington this last week. There were several drab, depressing days with occasional near-freezing rain. Just the sort of day when, as a chorus girl once remarked, "one likes to curl up at home beside a nice bank book."

TO EXPLAIN this general state of apathy and inactivity in the world's greatest deliberative body, the speaker at the time was Senator Ellender of Louisiana, who through a display of prodigious industry, was nearing the end of a six-day, non-stop speech filibuster against the anti-lynching bill. Senator Smith was on duty as the understudy and sentinel just to make sure the Senator from Louisiana did not lose the floor by any parliamentary mishap.

But the boy orator from the bayou country completed his record-breaking effort without showing the slightest sign of exhaustion. Indeed, when he finally gave up the floor, he did so only in courtesy to the Senator from Mississippi (The Man Bilbo), who had prepared some remarks which he desired to express on (or approximately near) the subject of lynching.

FOR TWO weeks now this farce has been going on with the prospect that it may continue even through the night sessions which began on January 24. The silliest angle of the whole business is that if there is anything to say about proper Federal control of lynching that has not been said in the 16 years the subject has been before the Congress, it can't possibly be said in the English language. Yet Senator Bilbo has announced that he could go on for six months.

The answer, of course, is that none of these filibusters is saying anything new. They are simply consuming time, and the whole situation has resolved itself into a game to determine whether the shrewd Mr. Garner can catch any of the Southerners napping long enough to put over a parliamentary "fast one," or whether the Senators who are fighting the Civil War over again every day on the Senate floor, will exhaust the majority into conceding a checkmate. In the latter case, the lynching bill would be put back on the shelf where it has lain these many years, and once more will "white supremacy" be saved—or something.

It so happened on this writer's visit to the press gallery that one reporter raised the question of whether Mr. Garner was bluffing when he talked about night sessions. He ventured the casual opinion that the administration would have to run "bank nights" to get a quorum, but most of the others dissented. It looked like a long siege of hot air which, of course, meant longer and more irregular hours for said reporters.

The irritating aspect of the situation from the point of view of the press is the possibility that Mr. Garner might pull his "fast one" any minute and, naturally, no self-respecting newspaper man would want to lose out on the climax.

"If they have to have these crazy

sessions," said one reporter, "why can't they read something interesting? Just listen to that stuff about Hawaii. What does he (the Senator) care about Hawaii, or you, or me, or anybody else? What relation has it to the bill? None. So why doesn't he read something interesting? It shouldn't make any difference to him."

This led to a series of facetious suggestions for making filibusters more tolerable for those who have to sit through them. The suggestions ranged from moving pictures to radio broadcasts.

BUT THE REAL reason why this writer brings up this filibuster business at this time is to explain why the legislative process in Congress has come to a point of stagnation. The House, in effect, is twiddling its thumbs while the unreconstructed rebels in the Senate are talking away the taxpayers' money in an effort to fight off the will of the majority of the Senate.

If the oft-repeated suggestion that congressional debates should be broadcast throughout the country on the radio were carried out, the filibuster might become a relic of the past. Certainly nothing would send up the temperature of the folks back home quicker than to listen-in to the interminable and irrelevant raving that usually characterizes a filibuster. If they could only hear the buncombe that their tax money is being spent to air, they would soon see to it that the gentlemen on the hilltop got down to business—pronto!

An interesting sidelight on this particular filibuster is the possible effect it may have on the future leadership of the Senate majority. The present leader, Senator Barkley, has been maneuvered into an uncomfortable position of being compelled to lead the fight for the lynching bill. And Senator Barkley comes from a state (Kentucky) where vigorous activity on behalf of such a bill is not regarded as politically smart. This situation was made to order for the present governor of Kentucky, "Happy" Chandler, to build up his own candidacy for the Senate.

Now, if Governor Chandler can beat Barkley next November, the administration will not only lose a faithful Senator but also an obedient majority leader in the Senate. The new leader would almost certainly be Senator Harrison of Mississippi, who lost out to Barkley by one vote, thanks to New Deal favoritism for Barkley.

Needless to say, under such circumstances, Senator Harrison would not feel the exact degree of devotion to the New Deal in directing the business of the Senate that Senator Barkley has displayed. And neither would Governor Chandler as Senator be likely to line up invariably with the faithful, if the administration intervenes in the Kentucky primaries on behalf of his opponent as it threatens to do.

THE OUTCOME of the filibuster is a sheer guess at this writing. Secretly, the inner circles of the New Deal would just as soon see the filibuster succeed, in order to prevent further loss of control over the Southern Democratic bloc. They have no special enthusiasm for the bill on its own merits.

They think it is commendable but that it can just as well wait until it can be enacted with less political embarrassment. But there are other Democrats, strongly augmented by left-wing Senators and gleeful Republicans, who are just as determined to put through the bill and make the President take the responsibility for signing it (he would hardly veto it). The result may have an important effect on the future national alignment of the Democratic party.

This also explains the lack of really vital news from Washington during the last couple of weeks, aside from the continuous shell game which President Roosevelt keeps playing with the press concerning what he really thinks about holding companies.

Lest you think that appellation "shell game" is a bit *lese majesté*, consider the fact that no matter what the press concludes is the President's final conviction on the subject, he can always say they had him all wrong. Direct quotation being impossible, the President always hold the advantage, just like the shell game operator. You think you see what the President means and lo, when the little shell is lifted, he didn't mean any such thing.

THE AMERICAN Radio & Telephone Association (CIO) has set up a new shop in Washington: a "legislative counsel" to look out for organized labor in all movements towards the consolidation of the two national telegraph companies. From this source comes other news of some interest to the telephone industry. It concerns the CIO charges that the Association of Western Union Employes is being dominated and controlled by the Western Union Telegraph Co. The CIO (through its ARTA) is reported to be preparing to take this case to the United States Supreme Court.

Back of these charges is the most serious question in Federal labor regulation today—a question which the United States Supreme Court failed to answer in the series of decisions last year which upheld the Wagner Labor Relations Act. Is a so-called "company union" eligible under the Act to be exclusive bargaining agent (or, for that matter, a bargaining agency in any capacity) for the company's employes?

The National Labor Relations Board has taken the position that a company union cannot become such a bargaining agency. But that position involves the complex task of defining what is a company union. The NLRB claims that when it can be shown that the employer (i.e., the company) controls a so-called independent union, it cannot be called independent. Therefore, it can't, from the very nature of things, be a bargaining agency on behalf of the employes, even though a majority of the latter join it voluntarily.

The employer-interests claim that, in the absence of a showing of coercion, the very fact that a majority of employes in any organization voluntarily join a union, not affiliated with either the CIO or AFL, makes that union their bargaining agency within the meaning of the Wagner Act.

There are several test cases on alleged company unions in the courts. The real attitude of the NLRB seems to be to presume that every union not affiliated with either AFL or CIO is a company union or something very near it. As a number of telephone organizations have independently-organized employe groups functioning as bargaining agents within their plants, the progress of the Western Union case should be followed closely.

The Western Union company, incidentally, is likely to claim that it has had nothing to do with the control of the Association of Western Union Employes since the early days of its establishment.

SPEAKING of telegraph companies, the talk of Western-Postal merger is heard quite often these days in Washington. Most observers seem to think that enabling legislation could not be enacted because of the prevailing hostility towards monopoly. Just the same, the labor groups are on their toes.

Two points that the labor unions are prepared to argue very vigorously are: (1) That there should be no wholesale lay-offs resulting from any merger; (2) that any merger agreement must carry a minimum wage and maximum hour (30 a week) agreement.

If the proponents of a telegraph merger are prepared to meet these demands, one gathers that organized labor has no objection to it, monopoly or no monopoly. Some observers question whether enabling legislation would even be necessary, in view of the fact that Postal Telegraph is already in the process of reorganization in Federal court. But most legal opinion seems to be to the contrary.

Just why all this merger discussion should be so prevalent at this time, when the administration is cursing all trends toward monopoly so industriously is something of a mystery. Maybe the recent decision of the FCC to investigate telegram emergency rate increases is responsible. It should be noted that, notwithstanding Commissioner Craven's opinion that the commission investigation will not be broad enough, the order actually enacted by the FCC would cover a pretty big field if the FCC ever determined to stretch it.

The Operator's Corner

By MRS. MAYME WORKMAN

Traffic Supervisor, The Illinois Telephone Association, Springfield, Ill.

RECEIVING a busy report or a busy signal is always annoying to the calling party. Our customers have become so accustomed to instantaneous telephone connections that any delay is apt to result in impatience. On one occasion the man who invented the "busy signal" made several attempts to reach a number and each time he heard that familiar "clicking sound." Finally he turned to a friend and remarked: "Drat that thing. Why did I ever invent it?"

Because customers are prone to become annoyed when they are unable to reach a called number, due to a busy line, and because operators are anxious to mollify them, they are tempted to offer to call the calling party when the line becomes clear. However, we must constantly bear in mind that any service we render for one customer we must also render for another, therefore we should be careful not to establish a precedent.

It is never wise to *voluntarily* offer to call a party when a line that is busy becomes clear. However, it is the practice in some exchanges to call the calling party *upon request* to do so when a line that is busy become available. If an operator does agree to comply with this request, she should watch the desired line very closely and be sure to call the calling party when she is able to secure it. She should dismiss him by saying: "I will call you in a few minutes."

If it is not customary to call the calling party upon request when the called line is busy, the operator should say: "Will you call the number a little later, please?"

THE JOB OF keeping customers mollified under trying circumstances. Series No. 316

If the calling party insists upon being connected with a line that is busy, the operator should refer the call to her supervisor or chief operator.

If a subscriber has more than one telephone the operator should be careful to test all of the lines before giving out a busy report. If the subscriber has two or more telephones and the numbers are not consecutive, the switchboard should be properly marked to avoid giving out false busy reports.

Operators should make a proper busy test; that is by holding the plug in a slanting, downward position, touching the tip of the plug on the rim of the jack. If the called line is busy this method of testing results in a clear busy tone. It also eliminates the possibility of establishing connection to a busy line or plugging part way into the jack which interferes with conversation in progress.

In giving a verbal busy report the operator can assist in keeping her customers mollified by using a regretful tone of voice in passing the report "The line is busy."

Questions from Illinois Operators

1. If a subscriber asks for a number several times and the line is busy, is it proper for the operator to call him back if she is not too busy?
2. Is "Hello" (the favorite answer in years of pioneer work) permissible at the present time?
3. How do you pass a call by "address name?"
4. If a call is placed from a pay station and the operator does not collect enough money on the call, what notation should be made on the ticket?
5. What is the difference between a prepay and a postpay telephone?

The answers to these traffic questions are given on page 33.

*

(EDITOR'S NOTE: *Attention is directed to the fact that the answers to the traffic questions published in the January* 1 *and January* 15 *issues of* TELEPHONY *were transposed by mistake. The correct answers to traffic questions of Series No.* 313, *in the January* 1 *issue, were published on page* 39 *of January* 15 *issue. The correct answers to traffic questions of Series No.* 314 *were prematurely published in* TELEPHONY *of January* 1, *page* 36.)

Reorganization Plan of Kansas Telephone Co.

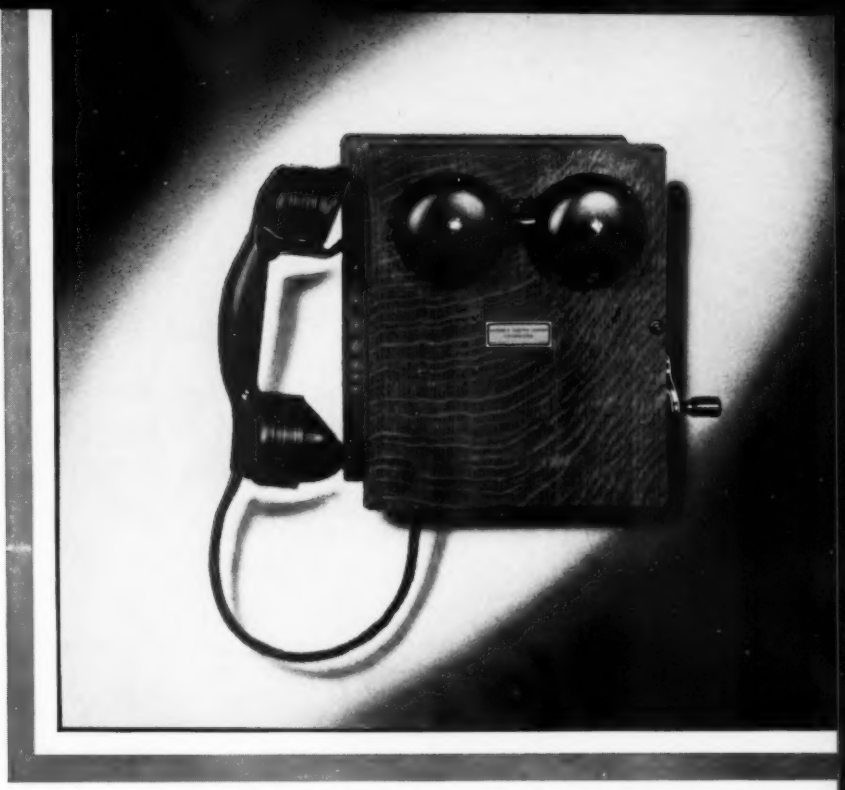
Judge Orie L. Phillips, of the U. S. Circuit Court of Appeals, recently approved a plan to reorganize the Kansas Telephone Co. now in receivership. It will shortly be submitted to the bondholders for their approval.

An offer by the bondholders protective committee of $310,000 was confirmed as being the highest bid, and represents about 90 per cent of the amount of outstanding bonds. However, the actual sale was held up for 30 days in order that the bondholders may have another meeting to approve the reorganization plan.

Use These

HANDSOME MONOPHONES

To "PEP UP" Your Magneto Service!



This Magneto Wall Monophone (Cat. AE-16) has especially powerful ringing equipment. Ideal for use on long and heavily loaded lines.

This Magneto Desk Monophone has everything complete in a single compact instrument, including a powerful 2-bar generator, especially suitable for one- to four-party service on short lines.

This popular desk Monophone (Type 19) with anti-sidetone booster circuit, can be used with any conventional magneto ringer box.

HERE'S a way to put new life into your magneto service, and stimulate new business as well!

Adopt these handsome magneto Monophones as your standard substation equipment from now on. Even if you begin by only replacing a few of your older, obsolete instruments with modern Monophones, their plus performance and smart appearance will arouse favorable comment at once. Inquiries for new service will start coming in, too, and before long you'll find your business definitely on the upgrade.

It's been done elsewhere—you can do it, too. And, what is equally important, without added expenditure for new switchboard or outside plant equipment. Just start a definite program of substation modernization — with *Monophones*—and observe results! Write—*today*—for prices and full information o nmagneto Monophones.

AUTOMATIC ELECTRIC

TELEPHONE, COMMUNICATION AND SIGNALING PRODUCTS

Distributed by:

AMERICAN AUTOMATIC ELECTRIC SALES COMPANY, 1033 W. Van Buren Street, Chicago

Export Distributors: AUTOMATIC ELECTRIC SALES CO., LTD., Chicago

Telephones in Principal Cities Of Historic Egypt

By WALTER BUCHLER

SIDELIGHTS on the furnishing of telephone service in the capital of Egypt and in the leading industrial and commercial city—Cairo and Alexandria. Operators required to speak four languages. Humidity and dust add to maintenance problem

CAIRO, the capital of Egypt and the largest city of Africa, has had telephone service since 1900 when the system was operated by the National Telephone Co., of London, on a magneto system. When the telephone system of England was taken over by the British Post Office, the telephone lines of Egypt were likewise taken over by the government.

Though Cairo is a large and fairly progressive city (with a population of more than 1,000,000 inhabitants, the majority of which are Arabians) there has so far never been any really big development in the use of the telephone. The city is now served by approximately 53,000 telephones, one-sixth of all the telephones on the African continent.

In due course of time, the telephone system in Cairo was changed to common battery operation, with the exception of the exchange at Bustan which continued in service until 1929 when the system in Cairo was changed to the rotary automatic system. At the present time Cairo's entire telephone system is automatic, with the exception of some of the smaller exchanges in the adjoining villages; most of these exchanges have common battery equipment.

The main automatic station is located in the heart of the city, adjoining the Telephone Administration building, which is itself an imposing structure. The station consists of two exchanges, with an ultimate capacity of 10,000 lines each. The building which houses the main automatic station is of stone and concrete construction erected between 1927 and 1929.

The Egyptian State Railways have their private automatic branch exchange installed in the same building. It consists of 600 lines of equipment with an ultimate capacity of 1,000 lines. Then there is another P. A. B. X. used by various departments of the government. It is located in the old Bustan exchange building, with 1,000 lines installed and an ultimate capacity of 1,500 lines.

Formerly a gasoline engine was used as a standby for charging the storage batteries, but this proved too expensive to operate. A Diesel engine was, therefore, installed, the motor generators being left as standbys. The current for the motor generators is supplied by the local electric generating company, a private undertaking.

Information board in the central exchange at Cairo, Egypt. Posted on the bulletin board is the anticipated delay in long distance calls to various points, by direct or indirect routes.

The telephone exchange at Giza, a suburb of Cairo, also has automatic equipment in the main exchange similar to that used in Cairo. It has an ultimate capacity for 3,000 lines.

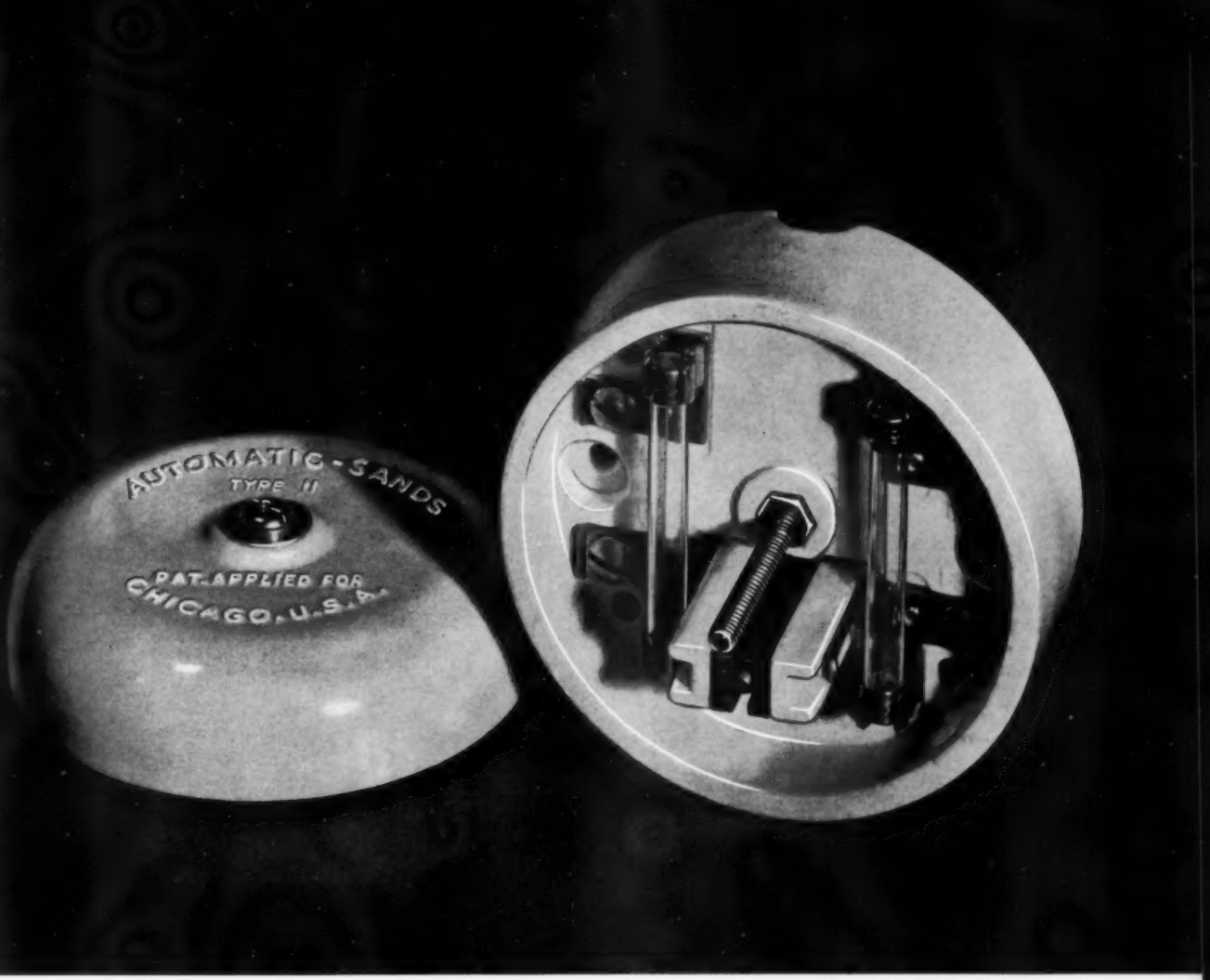
Heliopolis, another suburb of Cairo and in many respects a model city, also has its own automatic exchange. It is likewise of the rotary type and of the same make as that in the Cairo exchanges. More than 3,000 lines have been installed in the Heliopolis exchange which has an ultimate capacity of 7,000 lines.

The city of Heliopolis is a comparatively new municipality, built as a Belgian undertaking. It has its own electric street railway and electric supply and is a very pleasant place in which to live, many people employed in Cairo making it their home and commuting every day by electric railway.

The principal difficulty in telephone maintenance in Cairo is dust. Surrounded as the city is by low-lying hills, it is always dusty. This is particularly the case in summer, which is of long duration. In fact, whatever is open collects dust; and even when closed dust sifts in. Thus, more cleaning and routine testing of equipment is necessary in Egypt than perhaps in any other country.

The central exchange is equipped with a ventilating plant, and it is possible that a dehydrating plant may also be installed. But the humidity problem is no longer an important problem in Cairo since the telephone equipment installed in that city was made especially to meet tropical conditions. The intense heat prevailing in summer sometimes affects the check meters, and it is necessary to cool their vicinity by actuating the ventilating plant during the hot period.

All cables are laid in underground conduit, with brick manholes along the routes for inspection purposes. Electrolysis is the chief problem outdoors, especially at Heliopolis where the air is drier and tramway traffic is heavier. Although usual grounding precautions are taken, entire protection is not afforded.



Type 11 Sands Sub-Station Arrester Offers Full Protection at *Low Cost*

The Type 11 "rosette" sub-station arrester is an exclusive Sands achievement in compact, efficient design. It is only 3⅜ inches in diameter and projects but 2 inches from the surface on which it is mounted—yet it provides full protection against lightning and crosses with electric circuits, and at very low cost.

Its appearance is unusually pleasing. When closed, it has no projections or exposed terminals. Both base and cover are of heavy porcelain. Five ampere glass fuses are employed, which enable the maintenance man to tell at a glance whether or not either fuse has blown. Mounted in a well between the fuses are two Type 2105 discharge blocks with carbons. Carbon blocks with dielectrics, instead of discharge blocks, can be furnished on special order.

Write today for full information about this and other Sands protective devices. They incorporate many novel and exclusive features in their design and are of extra heavy, high quality construction in every detail.

SANDS PROTECTION EQUIPMENT

is made by

AUTOMATIC AE ELECTRIC

Distributed by: AMERICAN AUTOMATIC ELECTRIC SALES COMPANY, 1033 W. Van Buren St., Chicago

Export Distributors: AUTOMATIC ELECTRIC SALES COMPANY, LTD., Chicago

There are more than 15,000 lines connected in Cairo, both for business and private use in the home. In business there are probably more Europeans using telephones than Egyptians, and in homes more Egyptians than Europeans. Desk telephones are mainly used, in the home as well as in business establishments.

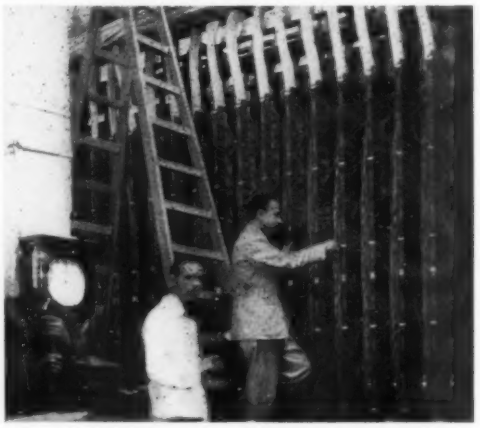
There are numerous public pay stations in Cairo, practically all being attended. Experiments have been made with unattended pay stations, but there is some difficulty with counterfeit coins and other devices employed to get free calls. The pay stations are usually attached to a post office, but the work of attending to them is delegated to a special man, as telephones and telegraphs are a distinctly separate department from postal. Shops, stations and other places at busy centers also have these telephone facilities.

One can telephone over almost all of Egypt, but long distance calls are mainly used for business purposes. The rate is charged on the basis of kilometer distance. Radiotelephony is operated to all countries, but it is not extensively used, as it is too expensive for the average Egyptian. It is used primarily for important business and government calls.

The staff employed by the telephone section of the government consists of Egyptians in subordinate positions, but the head of the department is an Englishman and the engineers are likewise chiefly British. There is a training school for the instruction of members of the subordinate staff, and there the elements of electricity and telephony are taught.

All maintenance is carried on in the department's own workshop. No telephone equipment is made locally, however, it being purchased by tender through the Egyptian State Railway store's department.

Manual switchboard operators are trained in a traffic school. Girls are chiefly employed for daytime operating and men for night duty. Operators are required to speak a number of languages, such as Arabic, French, Italian and English. Arabic is commonly used and French is probably the most used foreign language in the city of Cairo.



Egyptian engineers at work in the Alexandria telephone exchange. Most of the engineers, however, are British, although Egyptians are employed in practically all subordinate positions.

Alexandria is the leading industrial and commercial city in Egypt. At the same time it ranks as the second leading port of the Mediterranean Sea, only being surpassed in importance by Marseilles.

The city of Alexandria has a population of approximately 600,000, comprising all nationalities, with Arabs, Greeks, French, Italians, Syrians, Armenians and other European races predominating. Telephone service was first established in Alexandria in 1897.

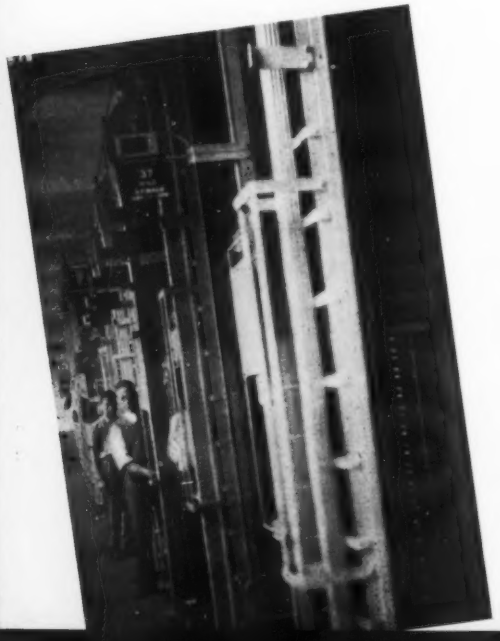
At the present time it is served by two exchanges. One is located in Ramleh, the residential section, and the other in the city proper; automatic service is provided. The exchange lines number 1,850 in Ramleh, and 7,150 in the city. Desk telephones are used by a majority of the subscribers, and these are chiefly of the handset type.

Technical troubles incident to the operation of the Alexandria exchanges are comparatively few. Being on the seacoast and more or less warm all the year round (not to mention that it is hot in summer) there is considerable humidity in the at mosphere and insulation suffers accordingly. There is a dehumidifying plant in the automatic exchange, which was installed only a few years ago and it is expected that the entire telephone system of Alexandria will soon be automatic.

There are 360 P. B. X.'s in Alexandria, the largest having about 100 lines. This comparatively high percentage is due to the large number of business interests connected with the sale and transportation of cotton, the most important item of Egypt's export trade and general economy, the center of exportation for which is the seaport of Alexandria.

All of the P. B. X. operators are women and they comprise nearly all nationalities, including Egyptians, Italians and Maltese. Most of them are required to understand four languages, namely, Arabic, English, Italian and French. Arabic and French are probably used most frequently. There are a great many Greeks in the city of Alexandria but more of them speak French than English.

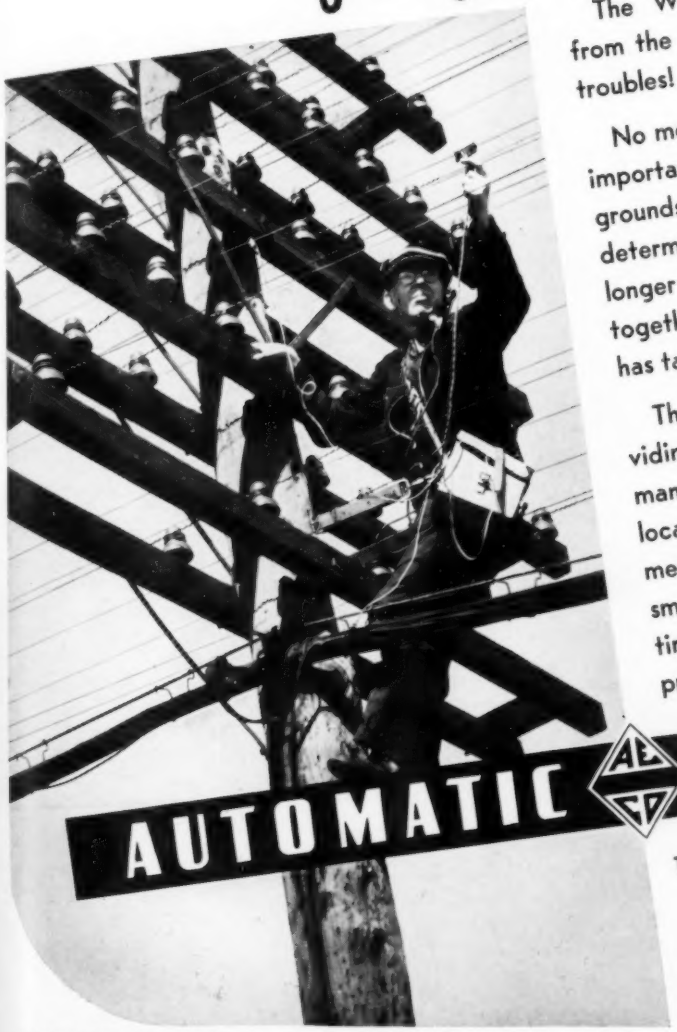
The city of Alexandria is linked with Cairo by means of underground cables, extending a distance of 200 kilometers (125 miles). This follows the route of the railway connecting the two cities, with a repeater station installed midway.



Equipment room in Cairo's No. 2 automatic telephone exchange. ←

Monitor switchboard in the Egyptian telephone exchange at Cairo. →

Prescribe this "FIRST AID TREATMENT" for your Disabled Lines



The West Test Set offers quick relief from the most difficult and bothersome line troubles!

No more must the telephone lineman open important, heavy-traffic lines to locate grounds or crosses, or waste time and effort determining where opens have occurred. No longer is it necessary for two linemen to work together to find where an equipment failure has taken place.

The West Test Set ends all this by providing a scientific "short cut" for the lineman. Working by himself, he can rapidly locate every type of trouble in lines or equipment. Every telephone company, large and small, should supply its field men with this time-saving, portable test unit. Write for prices and full information.

AUTOMATIC ELECTRIC

TELEPHONE, COMMUNICATION AND SIGNALING PRODUCTS

Distributed by:
AMERICAN AUTOMATIC ELECTRIC SALES CO.
1033 W. Van Buren St., Chicago

Export Distributors: AUTOMATIC ELECTRIC SALES CO., Ltd.
Chicago

Obtaining Best "LD" Service For Small Communities

By HELEN L. REILLY

Connecting Company Instructor, Ohio Bell Telephone Co., Zanesville, Ohio

PROPER RELATIONS between tributaries and toll centers essential to best "LD" service for small community. Advantages of toll center plan. Paper presented before the traffic conference at the annual Ohio telephone convention

IT IS THE POLICY of the telephone industry to provide a universal service. This means a service which makes it possible to connect a telephone with any other telephone quickly, accurately, and with a minimum of operating or equipment difficulties. Since the formulation of this policy, steady progress has been made in the telephone art.

The original policy has now been expanded to include satisfactory intercommunication not only between telephones in this country, but also between telephones almost anywhere in the civilized world. Each year sees the addition of still more points to which it is possible to carry on telephone conversations. Of particular interest to us in Ohio is the recent development by the Lorain Telephone Co. of combined radio and telephone communication with ships on the Great Lakes.

It is obvious that the present stage of development was not brought about by accident. It was attained through constant study and experimentation, in an effort to perfect the telephone equipment, practices, and organization.

Special Training Needed for Handling Toll Calls

Let us consider the organization and operating methods necessary in realizing this policy of universal service. Exchanges, varying in size, provide local service between the telephones in each community. Toll lines provide intercommunication between the local exchanges. The number of toll lines required by each exchange is governed by the amount of outgoing and incoming traffic. Logically then, the larger the exchange the greater the number of circuits it will require.

Generally speaking, the amount of toll traffic originating in an exchange varies in direct ratio to its size. In other words, the smaller the town the less important becomes the toll part of the operating job. The major portion has to do with the giving of local service and, from a management standpoint, it is not economical to spend the money that would be required to give these operators the detailed training needed in the handling of toll traffic.

As the toll part of the job becomes larger this training expense can and must be undertaken; and we find that in those exchanges where the volume of toll traffic is large, it is handled as a separate problem, separate and distinct from the local service. These toll operators receive three or four weeks' initial training before they are placed on the board and, as a result of their specialization on toll, they eventually become very proficient in the handling of toll traffic.

It has been found from experience that this initial and subsequent training, as well as careful supervision, is necessary in order to create the maximum operating efficiency and economical use of the expensive long-haul toll circuits. It seems reasonable as a natural development step in the handling of toll traffic that it should be directed through and handled to a great extent in those larger offices where, as I have already pointed out, the operating personnel has received extensive training and where this traffic will receive attention as a special responsibility in itself.

A natural byproduct of this setup is the freeing of the operators in the smaller exchanges where the major part of their job is the giving of local service, of the operating time it would take them to handle the long-haul toll calls. This reduction in their work load, through transferring it to the larger exchange, enables them to give better service on the traffic which they handle themselves.

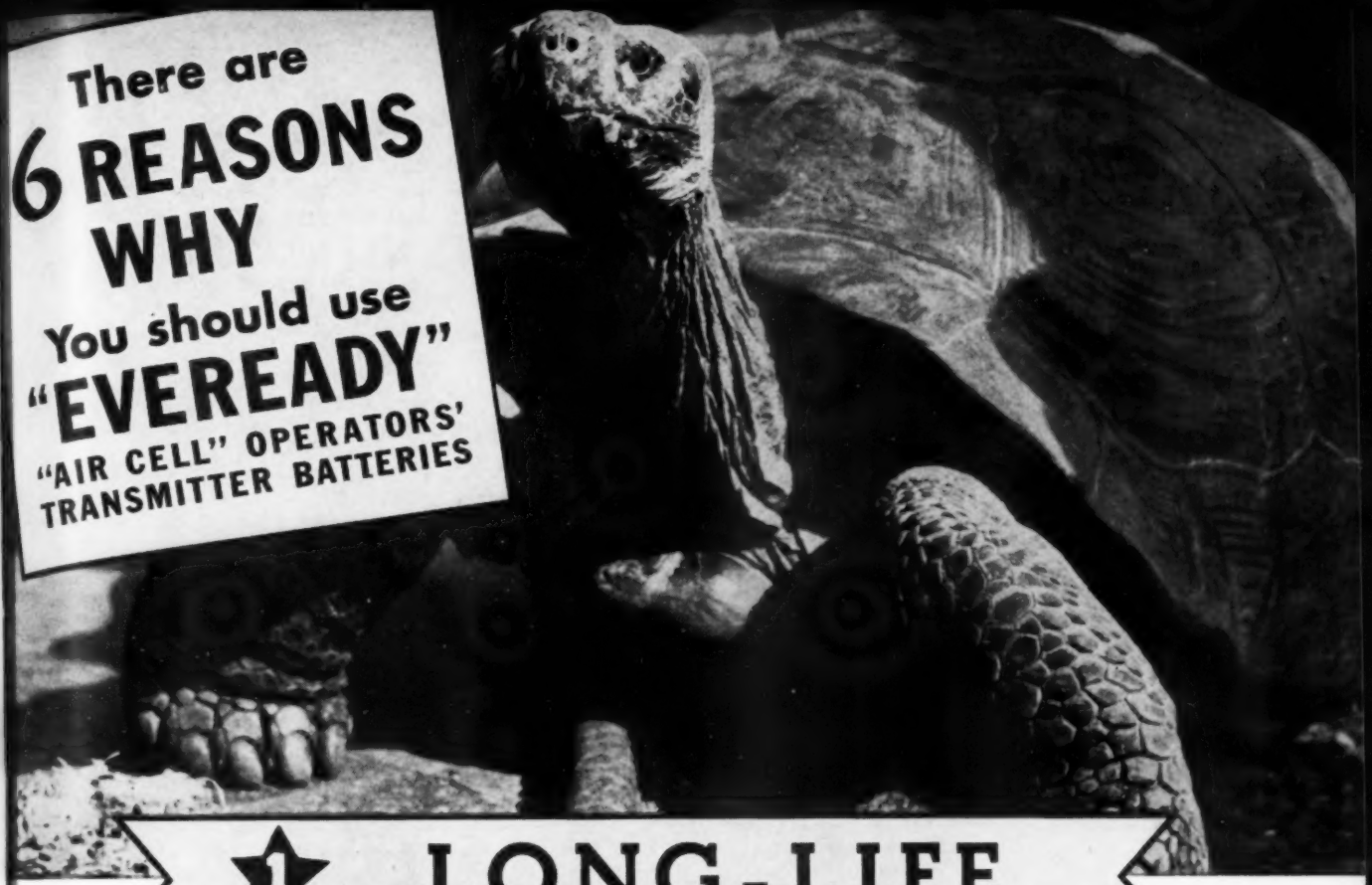
Tributary and Toll Center Overlapping Responsibilities

The offices selected to handle toll traffic for other offices are known as toll centers and those offices which pass their traffic to toll centers for completion are known as tributaries. The term "tributary" does not carry with it any implication of unimportance or of being in a secondary position in the scheme of things. In the telephone language it carries with it the same meaning as is implied when we speak of a great river system.

The Mississippi is spoken of as the longest and biggest river in our country, but it is great only because of its tributaries, such as the Ohio, and the tributaries of its tributaries, such as the Muskingum and smaller bodies that flow into the Muskingum. To draw a parallel, the telephone industry is great only because of the possibility that has been created for complete interchange of traffic and the natural flowing of traffic from the smallest and most remote telephone community in the country.

In actual practice, the tributary and toll center share the responsibility for the service to the tributary toll customer. There can not be a clear line of demarcation, dividing equally this responsibility. If the customer is to receive the best possible service, both offices must recognize overlapping responsibilities.

The tributary operator should not feel that, after the customer has been connected to the toll center, her responsibility regarding his call is ended. Her assistance may still be required by the toll center operator. In turn, the toll center operator should regard the tributary customer as being the same as a cus-



There are 6 REASONS WHY You should use "EVEREADY" "AIR CELL" OPERATORS' TRANSMITTER BATTERIES

1 LONG-LIFE

Claiming long-life is one thing

... *guaranteeing* it is another

With every set of T600 and T300 "Eveready" "Air Cell" Telephone Operators' Transmitter batteries, you receive, *in writing,* a guarantee of 6,000 talking hours of peak service.

And that means 6,000 hours of *level power* without loss of voice volume. It means freedom from power supply worries, emancipation from frequent battery changing.

NATIONAL CARBON COMPANY, INC.

specifically

GUARANTEES

that the "Eveready" "Air Cell" Telephone Operators' Transmitter Batteries, Nos. T-600 and T-300—when used in the telephone service for which they are designed and in connection with transmitters of modern design, and when properly installed and maintained according to directions provided therewith —will deliver a minimum of 6,000 hours of peak transmission efficiency.

NATIONAL CARBON COMPANY, INC.

GENERAL OFFICES: NEW YORK, N. Y. • BRANCHES: CHICAGO • SAN FRANCISCO

UNIT OF UNION CARBIDE AND CARBON CORPORATION

★ **WATCH FOR FIVE OTHER REASONS WHY YOU CAN SAVE MONEY BY USING**

EVEREADY

TRADE-MARK

"AIR CELL" TELEPHONE OPERATORS' TRANSMITTER BATTERIES can be obtained quickly from any of the principal telephone supply distributors

The words "Eveready" and "Air Cell" are trade-marks of National Carbon Co., Inc.

tomer of her own exchange and give him service of the same quality service rendered to a customer in her immediate exchange.

The manner and method used by the tributary operator in transmitting the customer's request to the toll center determines to a great extent the quality of the service the toll center operator will be able to give.

To go back a few years in telephone history, we can all remember when a telephone subscriber wishing to place a toll call had to call long distance and give his call to the recording operator. She would then dismiss him saying that we would call him. It would then be necessary for us to send this toll ticket to the line board and, after a certain interval of time, the outward operator would work on this man's call and call him back when she had a report.

The development and improvement of operating methods brought about the introduction of combined line recording service, usually called CLR. A subscriber calls long distance, is told to hold the line and the operator who records the call proceeds immediately with its completion. The advantages of this method are obvious.

CLR Has Contributed Much to Toll Service

In the first place, it enabled the telephone industry to reduce the speed of service from approximately ten minutes of about ten years ago, to the level of about 1.5 minutes today. In the second place, there is the unmeasurable advantage to the subscriber of being on the line and hearing the progress of his call. It gives him something to listen to while he is waiting for his party and it puts him in a position where he can volunteer additional information and suggest alternate parties, which is of material aid to the operator.

In my opinion this CLR service has contributed more than any other single factor to the high esteem which the public has of our present-day long distance service.

The handling of toll calls from the tributary offices should have this same objective in view, and there is the same possibility for improved and more satisfactory service to the customer. In other words, it should be our objective to connect every tributary subscriber through to the toll center operator and have him give the details of his call to her. It has been found that the tributary subscriber will very soon become familiar with this method of operation and will quickly distinguish between calls which his tributary operator handles for him and the calls on which she connects him through to the toll center.

I wish to again emphasize that the handling of toll calls in this manner enables the tributary operator to transfer a considerable portion of her work time to the toll center office, leaving her more time to devote to the handling of local traffic.

Cooperation Needed in Giving Dependable Service

In addition to a speedy service, as typified by prompt answers and rapid completion, the customer expects his service to be accurate and dependable. He expects not only to reach the party he is calling, but also insists that after conversation has started the transmission be satisfactory and the connection be free of interruptions and that he not be cut off. The tributary operator has a very definite responsibility in connection with these items—not only on the traffic which originates in her own exchange, but also on the toll calls which terminate in her office.

The giving of the best speed of service in other offices depends materially upon receiving a prompt answer to the toll line signal at the tributary office. After the toll signal has been answered, the tributary operator—in the interests of the best possible service—must see to it that the connection is promptly established to the correct called station and, furthermore, she must be extremely careful in supervising this connection after it has been established to avoid interrupting the conversation and to prevent causing a cut off.

In the provision of a universal toll service, it is as important to provide a service that is uniformly good as it is to provide universal interconnections; and the tributary operator has as definite a part in this uniformly accurate service as she has in the rendering of a uniformly fast service. This accuracy feature is one which is sometimes overlooked by all of us.

If we only stop to think about it, we realize that to a toll customer there is nothing much more annoying than to be cut off or to be subjected to a series of interruptions caused either by toll line trouble or by the improper challenging of an operator.

Provide Additional Operators as Increased Toll Requires

To sound a word of warning in connection with the provision of an adequate operating force at all times: Our telephone traffic is now on the up trend. During the last few years we have gone through a period when our traffic was decreasing and we were confronted with the problem of reducing the number of operator hours on our switchboards. Now that the trend has changed, we must not be too slow in again increasing our switchboard coverage.

If we are today handling 35 per cent more traffic than we were two or three years ago with the same number of operating hours on our switchboard, we are certainly not giving the same grade of service that we were giving three years ago and are just as certainly not giving as prompt and as accurate service as we should give if we are to keep our universal service at its present high level.

Here again is another item where the tributary office can make a real contribution to service—service not only to her own customers, but service to the toll center. Let us all be sure that our boards are covered by the proper number of people at all times and that we promptly advise the management whenever we find that additional coverage is necessary.

Standard Practice Provides Understanding

As an aid in the provision of a uniform service, a standard operating practice is necessary. Standard practices permit the steady, uninterrupted flow of traffic from the originating to the terminating points. The operator-to-operator contacts required in handling toll traffic are rapid and pleasant because of the common understanding provided by a standard practice. The standard practice, like nearly everything else in the telephone industry, has gone through a process of steady evolution and development.

It has changed with the service requirements. No one individual or group of individuals can be said to be responsible for it. Everyone in the operating departments can claim a share in its development and its success. It has been adapted to the needs of all types of offices and, whether tributary or toll center, each can find in it the rules to be followed in giving a service which is satisfactory from the customers' point of view.

In the giving of universal telephone service, the tributary and toll center office unite on common ground, each with its own as well as mutual responsibilities. It is our duty to insure that the relations between them are such as to meet our service objectives.

Northwestern Bell's Progress and Future Plans

In a New Year's greeting to the employes of the Northwestern Bell Telephone Co., President A. A. Lowman said customers have indicated in many ways their appreciation of continued improvement of good service. Further progress has been made in recovering business lost during the depression; severe and devastating storm emergencies have been met and the property has been well managed.

Progress in restoring company earnings has been retarded by slow recovery, particularly in the rural districts, of business lost during the depression and by very substantially increased payroll and tax expense. Mr. Lowman said that the morale and interest of employes has been maintained at a gratifying level, and that the management has confidence in their ability.

Employe sales are to continue as a factor in giving good telephone service. The sales supervisors prefer to have employes make direct sales, and say this is the most satisfactory method. The objectives in the campaign planned for this year are whether the customer has the proper amount of service and equipment; how service can be broadened to the general public; how more efficient usage can be made of plant and how campaigns may be conducted to offset business fluctuations.

During December the number of telephones gained was less than half the number gained the year before for that period, and in some exchanges actual losses have been recorded. As a whole the company has not recovered depression period losses. On November 30 last, the company had 21,627 stations less than at the peak of April 30, 1931.

During the first quarter of 1937 there were gained 9,180 stations, compared with 8,197 for the first quarter of 1936; the second quarter showed a slowing up, 5,322 as compared with 6,370 the year before; third quarter, 6,177 compared with 6,659; and fourth quarter, 2,748 compared with 3,179. In November only half the 1936 gain was registered.

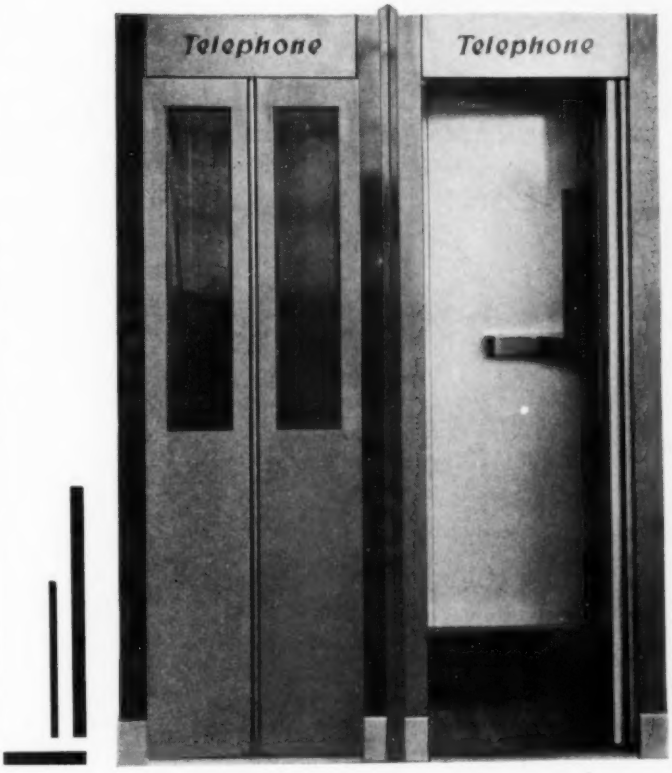
▼ ▼

Seek to Restore Telephone Service

A delegation from the Cannelton (Ind.) Chamber of Commerce and several interested persons from Tobinsport went to Indianapolis January 12 to confer with Perry McCart, chairman of the Indiana Public Service Commission, concerning the restoration of telephone service at Tobinsport. The 40 subscribers have been without service since March of last year.

go modern with **STEEL**

— it serves and survives —



PAY FOR YOUR BOOTHS

OUT OF PROFITS

Introducing a new plan in the sale of Telephone Booths! . . . Sherron All-Steel, Sound-Insulated Booths have so many revenue-producing features that the manufacturer can offer the industry a plan for *the payment of booths out of profits.*

Write today for complete details of this plan and a full description of these sanitary, ventilated booths that are offered at prices definitely lower than existing folding door booths now in use.

SHERRON METALLIC CORPORATION

1201 FLUSHING AVENUE **BROOKLYN, N. Y.**

National Distributors and Sales Agents

J. H. BUNNELL AND CO.

215 Fulton Street, New York City, N. Y.

A GRIP FOR ALL NEEDS

No. 1628-5 B.
"Chicago" Grip.
Maximum opening .563.
Minimum opening .115.
Safe Load, 8,000 lbs.

Here's the new "Chicago" Grip capable of handling messenger or guy strand from 3/16 in. diameter up to 1/2 in. diameter. A genuine all purpose grip that can also be used satisfactorily on bare conductors, solid or stranded, from No. 6 to No. 4/0 seven strand copper and A.C.-S.R. up to No. 3/0. A grip that even satisfactorily handles the new three-strand "copperweld" conductor. The bronze-lined jaws prevent slippage. This new grip will afford a sure hold under all conditions, with loads up to 8,000 lbs.

DISTRIBUTED THROUGH JOBBERS

Foreign Distributor: International Standard Electric Corp., New York

The four pamphlets listed below will be sent without charge to anyone interested. Check the ones you want:

- ☐ Safety for the Pole Climber.
- ☐ Specifications on Linemen's Belts and Safety Straps.
- ☐ The Safety Factor on Linemen's Leather Goods.
- ☐ Pocket Tool Guide.

Mathias KLEIN & Sons
Established 1857 — Chicago, Ill. U.S.A.

3200 BELMONT AVENUE

Here and There in the Field

Radio Debate on REA Sharing Interference Costs

The controversy brought up by REA Chief Carmody, in refusing to permit electric cooperatives financed by the REA to share expenses of eliminating inductive interference on rural telephone lines, has gone to college. Teams from the Iowa State College at Ames are to debate the question:

"Resolved, that the electric companies, whose lines cause interference with rural telephones, should pay the expense of eliminating it."

This debate is to be broadcast from Station WOI at Ames at 11:15 a. m. (central standard time), Thursday, February 17.

Telephone managers within range of Station WOI at Ames, Iowa, undoubtedly will advise and urge their rural line customers to tune in on this timely debate. WOI is found at 640 on the dial.

▼ ▼

Violent Magnetic Storm Affects Communications

A severe magnetic storm, starting at 12:30 a. m., eastern standard time, January 22, completely disrupted short-wave radio transmission and greatly disturbed all magnetic elements. The storm was reported to the U. S. Coast and Geodetic Survey by Albert K. Ludy, observer in charge of its Cheltenham Magnetic Observatory in Maryland.

The Survey said that "the earth acts like a great spherical magnet, and like a magnet it is surrounded by a magnetic field, which varies from hour to hour and from day to day. At irregular intervals this field is disturbed by what are called magnetic storms, the reason for which is not fully understood. It is known, however, that they usually accompany the appearance of large spots on the sun, which at this time are more frequent, since we are approaching the maximum of the sun-spot cycle."

Operators in charge of the overseas telephone and telegraph circuits of the American Telephone & Telegraph Co. and RCA Communications reported January 21 that for several days unusual conditions had been experienced on the short radio waves.

An operator of RCA Communications said that while conditions had been "none too good" during the week, an almost complete interruption of short-wave traffic between New York and London was experienced January 21 about 1 a. m. Almost all traffic was shifted to the long-wave circuits, which are less affected by the earth's magnetic condition resulting from sun-spots, now at a high peak.

While short waves in general grow stronger as the sun-spot cycle approaches its maximum, those short-wave channels used in commercial communications are violently disturbed and for this reason transfer to long wave lengths is necessary.

Interruptions in long distance short-wave communications are commonly experienced during the sun-spot cycles of the sun, which reach a maximum about every 11½ years.

Were it not for the long-wave circuits, oceanic distances often could not be covered during violent magnetic storms with any degree of reliability. So the engineers switch to the circuits that will push the signals through the storm and calmly wait until the sun-spot activity, and its attendant magnetic storms, subside.

▼ ▼

Iowa Radio Broadcasts Concerning the Telephone

A circular letter mailed out by the Iowa Independent Telephone Association to member companies, under date of January 25, called attention to forthcoming telephone broadcasts over the radio as follows:

"At 12 o'clock noon, January 31, Station WOI at Ames, 640 on your dial, will interview Secretary Chas. C. Deering about the telephone business and rural telephone service.

At noon, February 7, over the same station, Secretary Deering will talk about the emergency value of telephone service and how telephone service affects farm fire insurance rates.

At noon, February 14, over the same station, Secretary Deering will discuss rural telephone problems as affected by rural electrification.

At 11:15 a. m., Thursday, February 17, two debating teams at Iowa State College, Ames, will broadcast a debate over WOI on the question, 'Resolved that the electric companies, whose lines cause interference with rural tele-

phones, should pay the expense of eliminating the interference.'

We urge you to ask your rural subscribers to listen to these broadcasts. Many of you have general rings and can easily notify all of your farm people. Get just as many farm listeners as possible."

▼ ▼

Iowa Companies Ask Increased Compensation

At a meeting of about 32 telephone men and women in Remsen, Iowa, January 19, a resolution was adopted requesting the Northwestern Bell Telephone Co. to change the toll compensation schedule so that the Independent companies will receive a greater amount than under the present arrangement.

The resolution stated that the Independent companies "must maintain competent help and furnish lines and equipment. They are held responsible for the collection of the tolls and since the cost of doing business has greatly increased the collection of tolls perhaps 95 per cent charged accounts are ever more costly to handle.

"They must maintain low and attractive exchange rates in the smaller communities or telephone service will not be generally subscribed for. Many companies have been forced to metallicize their farm lines. Therefore, the companies are entitled to have a just share of the toll business."

The resolution was unanimously adopted by those in attendance at the meeting.

Another resolution on toll compensation was sent to the Federal Communications Commission in Washington to Paul A. Walker, chairman of the former telephone division of the commission.

▼ ▼

High 1937 Telephone Gain In Columbus, Ohio

During 1937 the Ohio Bell Telephone Co. connected 18,657 telephones in the Columbus exchange area, while 11,337 were disconnected leaving a net gain for the year of 7,320, a new high mark for any one year in the history of the company, even exceeding the peak year of 1929.

With the opening of 1938 the telephone company started off with a total of 78,553 telephones in service in the Columbus area, which compares with 71,233 at the beginning of 1937. During the month of December the company made 1,181 installations while the disconnections numbered 989, leaving a net gain for the month of 192. In December, 1936, there was a net gain of 528 stations.

HIGHWAY

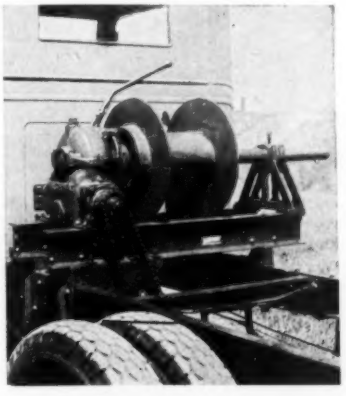
Type "LCW" Line Construction and Maintenance Body

The attractive and efficient appearance of this Highway equipment will increase the public's respect and good will for your company.

Here is a standard line construction and maintenance body that embodies the most up-to-the-minute and efficient design that has been offered to the telephone field. Every inch of space in the "LCW" Highway Body is efficiently utilized to carry the various tools and materials used by line crews.

It is light in weight, strong and durable. Outstanding features of the Highway Body are: the new "full vision" telescoping roof; the exclusive use of rust resisting galvannealed metal in the cabinets and panels; the full paneled front with enclosure between body and cab; and the "firm tread" all steel floor.

The "LCW" is a standard body . . . designed by experienced engineers who have a complete understanding of telephone company requirements.



The HIGHWAY WINCH

SAVES TIME AND MONEY

Illustrated above is the highly efficient Highway Winch . . . a dependable necessity for all telephone line crews. The Highway Winch reduces the time element in line crew operations and lightens the amount of manual labor. Available in several single and double drum models.

Write today for a Highway catalog in which the complete Highway line of public utility equipment is described and illustrated.

HIGHWAY TRAILER CO.
EDGERTON WISCONSIN

CHAS. E. WELLS, president of the Northwest Telephone Co., Redmond, Ore.

THEODORE J. WELLS, manager of the Redmond, Ore., exchange of the Northwest Telephone Co.

Cutover to New Equipment In Oregon Town

By FRANK RUSSELL
Representative Kellogg Switchboard & Supply Co.

GROWING TOWN of Redmond, Ore., made it necessary to enlarge and improve telephone facilities. Two-position switchboard recently installed with associated apparatus. Station growth expected upon completion of mill now being constructed

TO A SPORTSMAN in Oregon the mention of Deschutes brings thoughts of the Deschutes River and wonderful fishing. To a farmer it means a high-grade potato-producing section, and to a forester it means a National Forest wherein grows a wonderful stand of Ponderosa pine.

In the Deschutes Valley, located near the center of the state of Oregon at an elevation of about 3,000 feet, lies the town of Redmond. Redmond is too young to boast of much history but it does admit making history at the present time by being one of the most active cities within the state.

The valley, generally speaking, reaches from the beautiful Cascade mountains on the west to the Blue mountains on the east and is dotted with irrigated farms where once stood only sagebrush and juniper trees. The latter, for some reason, cannot stand civilization; possibly because their berries are used to make gin. More likely, though, it is because the wood is used for making pencils and is also sought after by local telephone men for poles, which brings us around to Redmond's fine new telephone system.

The new 6-800 Kellogg Masterbilt switchboard recently placed in service at Redmond, Ore., to give subscribers fast, dependable service.

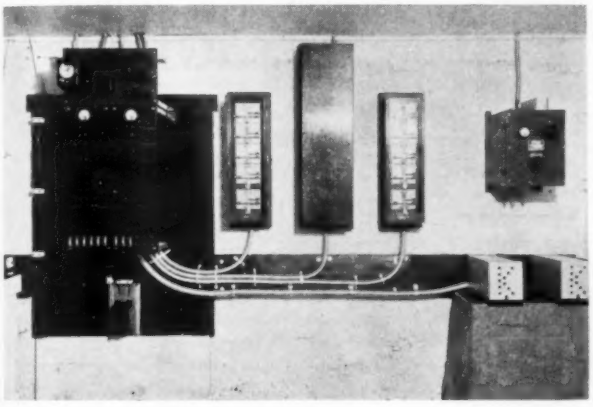
Redmond's first telephone line was constructed about 1911. Like early lines, it was gradually expanded until it developed into a complete system and was organized as the Deschutes Mutual Telephone Co. in 1914. C. H. Miller, present president of the Oregon Local Telephone Association, was selected as manager-lineman and a Kellogg 50-line switchboard was purchased and installed. The Kellogg equipment served the growing community until 1923 when it was necessary to add a 150-line Kellogg magneto position, utilizing the old position for toll work.

In 1928 Mr. Miller and his associates sold the properties to the Northwest

Telephone Co. Charles E. Wells, "father" of the Oregon public necessity bill, serves as president and supervises all activities of the Northwest Telephone Co. The company has its headquarters at Hillsboro, and operates exchanges at Grand Ronde, Sheridan, Wilamina, and of course, Redmond. Theodore J. Wells, a son, was made manager at Redmond.

One of his first acts was to add another Kellogg magneto position to the expanding central office, replacing the 50-line section and appropriating it for a wire chief's desk. However, even this expansion was insufficient. As business continued to grow, Mr. Wells began advocating the idea of a common battery telephone service for the community.

The increasing requirements for fast, dependable service to take care of the rising business tempo, made it necessary to take active steps to better the system. The final decision was to install a two-position Masterbuilt switchboard.



Power and ringing equipment installed in the rehabilitated exchange at Redmond, Ore.

The new switchboard is equipped with universal cord circuits having automatic listening and automatic ringing on all common battery connections. There is an automatic alarm or control on about everything worth mentioning — with switching controls and fuse alarms on the harmonic ringing system. The company has adopted a policy of regularly checking frequencies of the harmonic ringing machines with a stroboscope in order to detect any errors, and in this way prevents such complaints from originating with subscribers.

Mr. Wells and two of his sons, "Ted" and Charles, Jr., installed the new switchboard and the associated apparatus. At the time of the cut-over to common battery there were 460 subscriber stations. This will soon be increased because a mill under construction is expected to add a number of stations in the near future. As a matter of fact, 20 new lines have already been added.

The installation was made in quick time, not only because of the simplicity of the equipment, but also because the hunting season was not far off. And if there's anything the Wells like better than building and operating first class telephone exchanges, it's hunting and fishing, at which they are all adept. And Redmond, being ideally situated for all types of game and fish, gives them ample opportunity to make the most of it.

▼ ▼

"Open House" Proves Popular with Subscribers

The "open house" program as a means of interesting subscribers in telephone service is still popular with the Northwestern Bell Telephone Co. Newspaper advertising, screen announcements, invitations to civic groups and customers were utilized in eleven such Iowa demonstrations during the last eight months, officers report.

The total population of the cities was 158,000 and the number of registered visitors was 26,397, or about 17 per cent. In 1936 the average for the Bell system was 10 per cent. In addition, 14,000 were shown through plants in the Iowa area during office hours.

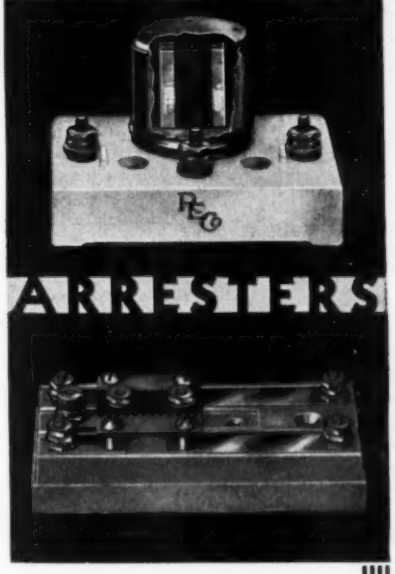
▼ ▼

Night Operator Aids Stricken Woman

A night operator of the Orange County Telephone Co., Middletown, N. Y., quickly secured aid for a blind and aged woman of that city, Mrs. Mary Doyle, who managed to signal the operator for aid after a fainting spell. After lying on the floor for many hours, the stricken woman finally regained consciousness and crawled to the telephone. The operator responded immediately to her request for aid and telephoned a neighbor who assisted Mrs. Doyle into bed.

Reliable

INDOOR



ARRESTERS

Air gaps for protection against static where crosses with electric circuits are not likely to occur.

No. 977AA, pictured at the top, is the standard arrester with many operating companies, can be easily converted into the fuse-type protector when power comes.

The No. 975B arrester has adjustable saw-tooth metal discharge plates, normally set .004" from the carbon block, forming self-cleaning air gaps. Can be supplied with or without metal cover.

Reliable ELECTRIC COMPANY
OVER 25 YEARS SERVICE TO THE UTILITIES
3145 CARROLL AVENUE CHICAGO, ILLINOIS

The Manufacturers' Department

New Emerson Electric Overlapping Blade Oscillator

A new 1938 model 12-inch oscillating electric fan (type 77646-AD), mounted on an adjustable floor stand, has been placed on the market by the Emerson Electric Mfg. Co., of St. Louis, Mo. With the blades of the fan made of highly-polished aluminum and the stand having a rich mahogany lacquer, the oscillator is attractive as well as useful.

A three-speed sliding switch is located on the stand of the base. The stand is adjustable to a height varying from three feet, three inches to four feet, nine inches.

▼ ▼

New Wall Brackets for Burgess Batteries

The Burgess Battery Co., Freeport, Ill., has announced two new wire brackets which have been designed especially for the Burgess Twin-Six and Tri-Six telephone batteries, for desk-set telephone installation.

The brackets are easy to install—only two small screws are necessary to fasten them securely to a wall, table, or desk. They keep the batteries off the floor, thus insuring undisturbed operation of the telephone service.

A new wire bracket especially designed by Burgess Battery Co. for its Twin-Six telephone batteries.

A. J. KOHN of Cincinnati, Ohio, is president of the Schauer Machine Co., which recently moved into new quarters in that city. Mr. Kohn has been associated with the telephone industry for more than 30 years.

Schauer Machine Co. In New Location

Established in new and more commodious quarters at 2060 Reading Road, Cincinnati, Ohio—one mile north from its former location at 905 Broadway—the Schauer Machine Co. is now better equipped to meet the increasing demand for its useful line of rectifiers and portable electric tools.

A. J. Kohn, president and chief operating executive of the company, has been identified with the telephone industry for more than three decades. His first connection was with the engineering and sales departments of the Stromberg-Carlson Telephone Mfg. Co., Rochester, N. Y. Six years later he went with the Cracraft-Leich Electric Co., of Genoa, Ill. (now known as Leich Electric Co.), serving as sales and advertising manager of that organization for 15 years.

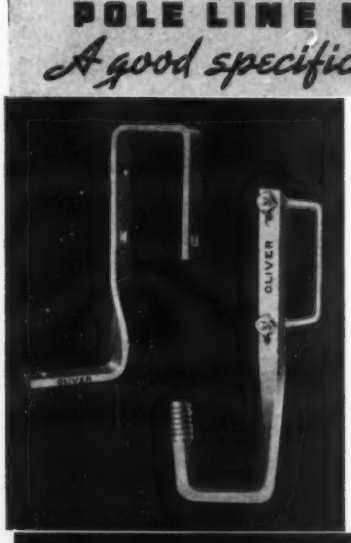
Severing his connections with the Leich organization in 1928, he assumed charge of the industrial division of the Kodel Electric & Mfg. Co., one of the pioneer manufacturers of dry copper oxide rectifiers. During the three years in which he was identified with the Kodel company, Mr. Kohn succeeded to a marked degree in extending the sale and use of its products.

Approximately eight years ago Mr. Kohn purchased a controlling interest in the Schauer Machine Co., at that time devoted exclusively to the manufacture of portable electric tools. Under his direction the company has broad-

OLIVER

POLE LINE MATERIAL

A good specification - always!



HOT GALVANIZED OLIVER STANDARD TRANSPOSITION BRACKETS

are made in four styles and meet the individual standards of the Western Union and American Telephone and Telegraph Co., The American Telephone and Telegraph type bracket is provided with a ⅝-inch round hole for lagging to the arm to prevent side movement.

OLIVER IRON and STEEL CORP.
PITTSBURGH, PA.

OLIVER POLE LINE MATERIALS
APPROVED AND ACCEPTED SINCE 1894
OLIVER

New city building in Anchorage, Alaska, in which telephone switchboard serving the community was installed by Automatic Electric Co.

ened as well as improved its line of products.

Mr. Kohn was born at Reeseville, Wis. After graduating from high school he was employed for a time as cashier for the State Bank of Reeseville. He resigned from this position, however, to enter the University of Wisconsin, at Madison, from which he later was graduated with a B.S. in electrical engineering. After several years of sales experience with the International Harvester Co. Mr. Kohn became affiliated with the Stromberg-Carlson company in June, 1906.

▼ ▼

Thriving Alaska Community Installs New Switchboard

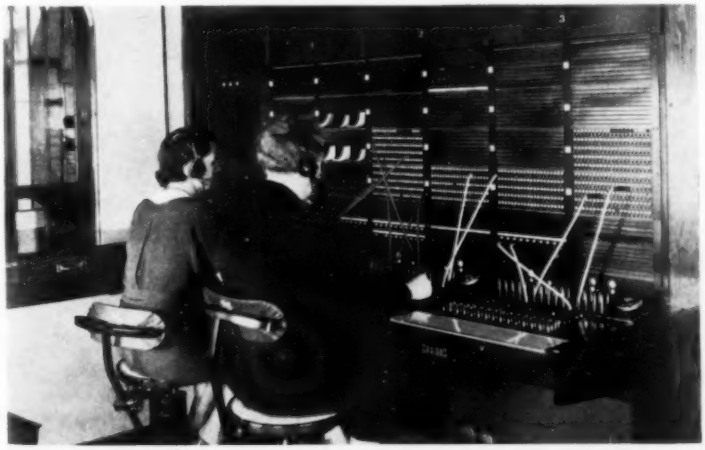
During recent years, the city of Anchorage, Alaska, has provided front page news for many United States newspapers as a busy center for resettlement, founding of new industries and general expansion of business in the face of world-wide depression. That the telephone service is keeping pace in this thriving community is evidenced by the recent installation of a Monotype senior switchboard in the new city building. The switchboard was manufactured by Automatic Electric Co., Chicago.

From a sparsely-settled tent town in 1915, Anchorage has grown to a modern city of 3,000 inhabitants serving a trading area of 20,000 people. Situated on Cook Inlet, an arm of the Pacific Ocean, it is the base city of all that portion of Alaska lying north of the Alaska panhandle.

It is the location of the major station of the U. S. Signal Corps for that region, and it enjoys exceptional transportation facilities—being the headquarters of the Alaska Railroad, a number of air lines and several steamship companies. Of late, it has become the Alaskan focal point for prospective settlers, investors, mining prospectors, big-game hunters, and tourists.

The new Anchorage switchboard is a three-position high-keyshelf type unit with a cable-turning section. It is equipped with 400 common battery line circuits and 10 toll line circuits. One of the two local positions is equipped with feature type common battery cord circuits while the other has full universal cords.

Coincident with the installation of the



Three-position Monotype senior switchboard which serves city of Anchorage, Alaska.

COOK

M-16 TERMINALS

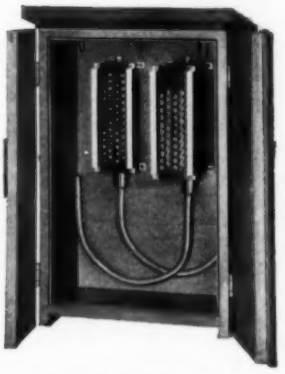
Made in 11, 16, 26 and 52 pair sizes as illustrated.

A sealer cable chamber terminal arranged for multiple cable nozzles. To be used as a test for either aerial or underground cable. Full cross connection and drop distribution provided.

The terminal is furnished mounted in a wood or metal housing, as illustrated, when specified.

An ideal terminal for rural cable between unattended exchanges or as a junction point of aerial and underground cable. Base, corebox and self-soldering nozzles are of steel, formed and hot galvanized. Face plate is of moulded bakelite. Studs, nuts and washers are of Everdur metal. Hood is of steel, hot galvanized.

Made in 16 to 404 pairs mounted in pole houses.



COOK ELECTRIC CO.
2700 Southport Ave. Chicago

Always Specify COOK PROTECTION

WHITALL TATUM INSULATORS

USED for years on telephone, telegraph, railroad and lighting company distribution lines . . . a dependable source of supply for uniform, well-designed transparent glass insulators.

WHITALL TATUM CO.

Glass Manufacturers Since 1836

225 Varick St. New York

STURGIS

TELEPHONE OPERATOR POSTURE CHAIRS

No. 416-D

Here is one of many models designed for telephone operator use. Easily and quickly adjusted by hand to any size individual. Comfortable, up-to-date and durable.

ASK FOR DEMONSTRATION

Distributed by

STROMBERG-CARLSON TELEPHONE MFG. CO.

ROCHESTER, N. Y.

Manufactured by

Sturgis Posture Chair Co., Sturgis, Mich.

central office equipment, a new outside plant was provided. This part of the work—an all-cable project—was engineered throughout by National Construction & Engineering Co., which also supervised the actual construction. The materials were supplied by American Automatic Electric Sales Co.

Officials in charge of the Anchorage exchange include H. E. Brown, mayor; Frank O. Berry, superintendent of utilities; and R. S. Bragaw, city clerk.

▼ ▼

New Copperweld Representative in Chicago Office

George P. Muenow has recently joined the engineering sales staff of the Chicago office of the Copperweld Steel Co. Mr. Muenow studied engineering at the University of Iowa and has had considerable electrical engineering experience.

G. P. MUENOW, member of engineering sales staff, Copperweld Steel Co.

Prices of Telephone Securities

(These quotations, as of January 22, 1938, are furnished by the Telephone Securities Corp., 120 S. La Salle St., Chicago, Ill.)

COMMON STOCKS

	Bid	Asked
American Telephone & Telegraph Co.	143	147
Associated Telephone & Telegraph Co., Class "A"	3½	6
Bell Telephone Co. of Canada	163	166½
Central Electric & Telephone Co.	¾	1¼
Empire Telephone Co.	3	5
Florida Telephone Corp.	7	9
General Telephone Corp.	12	14½
Home Telephone & Telegraph Co. of Fort Wayne, $50 par	53	..
Illinois Bell Telephone Co.	156	161
International Telephone & Telegraph Corp.	5½	8½
Investors Telephone Co., $100 par	9	12½
Lincoln Telephone & Telegraph Co., Class "A"	34	36
Middlewestern Telephone Co.	3½	5½
Mountain States Telephone & Telegraph Co.	119	123
New England Telephone & Telegraph Co.	99	102
Northern Ohio Telephone Co.	66	..
Peninsular Telephone Co.	21	24
Telephone Bond & Share Co., Class "A"	2	4
Western Light & Telephone Co.	¾	1¼

PREFERRED STOCKS

Associated Telephone Co., Ltd., $1.25	21	25
Associated Telephone & Telegraph Co., 7% first	42½	46
Associated Telephone & Telegraph Co., $6 first	42	45
Associated Telephone & Telegraph Co., $4 cumulative	7	9½
Bell Telephone Co. of Penna., 6%, $100 par	117	119½
California Water & Telephone Co., 6%, $25 par	19	23
Central Electric & Telephone Co., $50 par	25	27½
Community Telephone Co., $2 cumulative, no par	1	2¼
Commonwealth Telephone Co. of Wisconsin, 6%, $100 par	81	84½
Continental Telephone Co., 7% first	78	83
Continental Telephone Co., 6½% first	74	79
Diamond State Telephone Co., 6½%, $100 par	114	..
Empire Telephone Co., 6% cumulative, Class "A," $25 par	12	16
Florida Telephone Corp., 6% cumulative, $100 par	40	..
Gary, Theodore, & Co., first $1.60 pfd.	2	3½
General Telephone Allied Corp., 6% convertible	85	88
General Telephone Corp., $3 convertible	42	46
Home Telephone & Telegraph Co. of Fort Wayne, 7%, $50 par	50	53
Illinois Commercial Telephone Co., $6	79	81
Interstate Telephone & Telegraph Co., first pfd. "A," 6%	45	50
Jamestown Telephone Corp., 5% cumulative, $100 par "A"	100	..
Jamestown Telephone Corp., participating pfd., $100 par	100	..
Keystone Telephone Corp., $4 cumulative, no par	21	25
La Crosse Telephone Co., 6% prior	95½	99
Lexington Telephone Co., 6½% prior	44	50
Lincoln Telephone Co., 6% cumulative, $100 par	104½	106½
Lorain Telephone Co., 6% cumulative, $100 par	94½	98½
Middle States Telephone Co. of Illinois, 7%	93½	97½
Mount Vernon Telephone Co., 6% cumulative, $100 par	81	87
Northern Ohio Telephone Co., 7% cumulative	98	..
Ohio Central Telephone Co., 7% first	45	49
Ohio Service Holding Corp., $5 pfd., $5 par	35	39
Pacific Telephone & Telegraph Co., 6%, $100 par	135	140
Peninsular Telephone Co., 7% cumulative	106	109
Pennsylvania Telephone Corp., 6% cumulative	105	108
Rochester Telephone Corp., 6½% cumulative	109	..
The Southwest Telephone Co., 7%	1	2
Southwestern Bell Telephone Co., 7% cumulative pfd.	121	124
Telephone Bond & Share Co., 7% first	23	27½
Telephone Bond & Share Co., $3 first	17	..
Telephone Bond & Share Co., participating pfd.	7	..
Union Telephone Co., $1.70 pfd., $25 par	5	8
United Telephone & Electric Co., 6% cumulative	18	22
United Telephone & Electric Co., 7% cumulative	20	25
Warren Ohio Telephone Co., 7%, $100 par	32	40
West Coast Telephone Co., 6% $25 par	18	21
Western Light & Telephone Co., $1.75 first, $25 par	20	23
Wisconsin Telephone Co., 7%, $100 par	117	119

TELEPHONE BONDS

American Utilities Service Corp., 6s, 1964	62	64½
Ashland Home Telephone Co., 4½s, 1961	101	..
Associated Public Utilities Corp., 5s, 1947	61	64
Associated Telephone Co., Ltd., 4s, 1965	103	105½
Associated Telephone & Telegraph Co., 5½s, 1955	73½	78
British Columbia Telephone Co., 5s, 1960	105½	..

	Bid	Asked
California Water & Telephone Co., 5s, 1965	99	101½
Central Electric & Telephone Co., 5s, 1955	93½	96½
Central Iowa Telephone Co., 5½s, 1947	95	99
Central Telephone Co. of Delaware, 6s, 1938	8	12
Citizens Independent Telephone Co., 4¼s, 1961	101	103
Commonwealth Telephone Co. of Pennsylvania, 5½s, 1945	80	84½
Commonwealth Telephone Co. of Wisconsin, 4s, 1966	94	96½
Community Telephone Co., income 5s, 1949	11	15
Continental Telephone Co. 5s, 1953	90	94
Cumberland Valley Telephone Co., 5s, 1966	100	103
Florida Telephone Corp., 6s, 1945	88	92
Florida Telephone Corp., 6s, 1954 second mortgage	69	72
Gary & Co., Theodore, 6% income notes, $6 par	2¼	3¼
Home Telephone & Telegraph Co. of Fort Wayne, Ind., 6s, 1943	104½	..
Home Telephone & Telegraph Co. of Fort Wayne, Ind., 5½s, 1955	104	..
Indiana Associated Telephone Co., 4½s, 1965	105	107
Indiana Central Telephone Co., 5½s, 1938	86	90
Illinois Communities Telephone Co., 6s, 1949	48	52½
Illinois Commercial Telephone Co., 5s, 1960	96½	99
Illinois Commercial Telephone Co., 5s, 1948	97	99½
Inland Telephone Co., 6s, 1948	84	88
Interstate Telephone Co. of Idaho, 5s, 1961	97½	99½
Interstate Telephone & Telegraph Co., 5½s, 1953	83	85½
Investors Telephone Co., 3s, 1961	48	53
Iowa-Illinois Telephone Co., 3s, 5½s, 1949	flat	33½ 36½
Jamestown Telephone Corp., 5s, 1954	104½	106½
Kansas Telephone Co., 6s, 1939	flat	40 ..
Keystone Telephone Co. of Philadelphia, 6s, 1951	95	98½
Keystone Telephone Co. of Philadelphia, 5½s, 1955	94½	97½
La Crosse Telephone Co., 5½s, 1948	102	103½
Lexington Telephone Co., 6s, 1944	97	100
Lorain Telephone Co., 5s, 1958	100	102
Michigan Associated Telephone Co., 5s, 1961	103	105
Middle States Telephone Co. of Delaware, 6s, 1947	95	98
Middlewestern Telephone Co., 6s, 1943	72	76
Missouri Telephone Co., 4¼s, 1961	100	102
Ohio Associated Telephone Co., 4½s, 1966	98	101
Ohio Central Telephone Co., 6s, 1947	90	93
Pennsylvania Telephone Corp., 4s, 1965	105	107
Pike County Telephone Co. of Indiana, 6s, 1946	flat	40 ..
Pike County Telephone Co., Illinois, 6s, 1939	102	..
Platte Valley Telephone Corp., 6s, 1947	100	102
San Angelo Telephone Co., 5s, 1958	101¾	..
Santa Barbara Telephone Co., 3½s, 1966	99	101½
Southwestern Associated Telephone Co., 5s, 1961	93	96½
Southwestern States Telephone Co., 6s, 1948	49	53
Southwestern States Telephone Co., 6s, 1949	48½	52½
Standard Public Service Co., 6s, 1948	46	49½
Telephone Bond & Share Co., 5s, 1958	61	64
Telephone Service Co. of Ohio, 5s, 1953	68½	72½
Tri County Telephone Co., 4½s, 1956	100½	103
United Telephone Co. of Delaware, 6s, 1948	84	90
United Telephone & Telegraph Co., 5½s, 1953	95	98
United Telephone & Telegraph Co., 6s, 1953	98	101
Wabash Telephone Co., 4½s, 1956	100½	102½
Warren Ohio Telephone Co., 6s, 1942	93	97
West Coast Telephone Co., 5s, 1953	86	89
Western Light & Telephone Co., 5s, 1954	94	97

▼ ▼

Cancelling Stamp Boosts the Telephone

In New Zealand where the telephones are operated by the government, postoffices use a cancelling stamp giving one reason why persons should subscribe for telephone service. "The Telephone Banishes Loneliness" is the message imprinted on envelopes of letters recently received from New Zealand.

Answers to Traffic Questions on Page 16

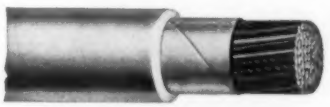
1. The answer to this question will be found in the preface.
2. It is true, "Hello" was used for many years but this word has become obsolete in telephone language because it was found to be a meaningless word, the use of which entailed a great deal of unnecessary questioning.
3. When the distant operator answers, say, for example, "Hill & Co." If the distant operator supplies the number acknowledge by saying "Right." If the distant operator says "I will give you Information," when the Information operator answers say, "This is Long Distance. (Name of called place), Hill & Co."
4. Whenever the full amount due is not collected write "shortage (amount)" in green diagonally across the face of the ticket and enter on the back of the ticket the reason why the charge was not collected, and sign your personal number. Rate the ticket at the full amount of the correct charge and refer it to the chief operator.
5. The difference is in the type of coin collector. In using a prepay telephone, five cents must be deposited to reach the operator and she is able to collect and return coins. In using a postpay telephone, the customer does not deposit any coins until instructed to do so by the operator. The operator is unable to collect or return coins from this type of coin box and the customer reaches the operator by lifting the receiver from its hook.

ROEBLING
electrical
Wire & Cable

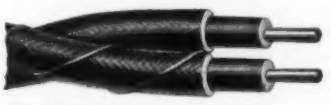
Telephone Cable... Paper Insulated and Leaded

ROEBLING makes available a wide variety of electrical wires and cables to meet practically every telephone and telegraph need. In addition to those shown, Roebling makes:—Parallel Telephone Wire ... Rubber Insulated and Braided, Bare Copper and Bronze Wire, Bare Galvanized Steel Wire, Galvanized Steel Strand.

JOHN A. ROEBLING'S SONS CO.
TRENTON, N. J.
Branches in other cities



Telephone Switchboard Cable .... Silk and Cotton Insulated and Leaded



Twisted Pair Telephone Wire .... Rubber Insulated and Braided.

ONLY A FINE PRODUCT MAY BEAR THE NAME ROEBLING

Commission and Court Activities

Asks to Reargue Refund Disposition

Permission to reargue the question of disposition of $1,600,000 not claimed from the Illinois Bell Telephone Co. by subscribers was asked in a motion filed by the state of Illinois January 21 in the United States District Court.

The money represents the remaining portion unclaimed after subscribers were awarded approximately $20,000,000 in refunds for overcharges on certain classes of coin-box service dating back to 1923. On December 23 Federal Judges Evans and Wilkerson ruled the telephone company could keep the money as the state did not represent the subscribers.

Attorney General Otto Kerner, who filed the motion, said the court had erred, because the state "is the only representative of the subscribers and its claim is founded upon its right as a sovereign and exists independent of statutes."

The motion will be heard by Judges Wilkerson and Evans.

▼ ▼

Bell to Take Over Kansas Properties

Authority was granted the Southwestern Bell Telephone Co. by the Kansas Corporation Commission, January 15, to take over all of the Kansas property of the United Telephone Co. and the Scandia Telephone Co. Involved in the transfer are 55 exchanges and many miles of toll lines located in northern and western Kansas.

Exchanges affected by the order include: Abilene, Almena, Atwood, Belleville, Beloit, Bird City, Blue Rapids, Canton, Chapman, Clay Center, Colby, Concordia, Downs, Dresden, Ellsworth, Enterprise, Frankfort, Gem, Goodland, Gypsum, Hays, Herington, Herndon, Hoisington, Hollenberg, Hoxie, Idana, Jewell City, Kanopolis, Kirwin, LaCrosse, Lincoln, Lindsborg, Lorraine, Manhattan, Mankato, Marquette, Marysville, McDonald, McPherson, Minneapolis, Norcatur, Norton, Oakley, Oberlin, Phillipsburg, Plainville, Salina, Scott City, Smith Center, Solomon, St. Francis, Stockton, Washington and Scandia.

▼ ▼

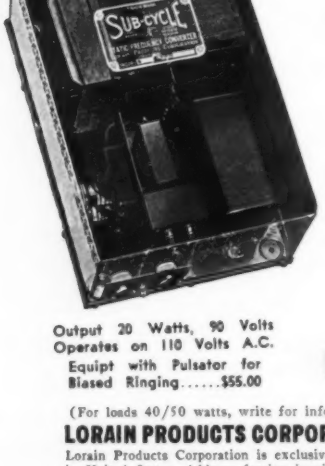
Indefinite Delay in Ohio Bell Rate Case

Various reasons are advanced for another delay in the rehearing of the Ohio Bell Telephone Co. state-wide rate case, which has been postponed by the Ohio Public Utilities Commission for an indefinite period. When and how the commission will proceed to reconsider the case, now 15 years old, appears uncertain.

Seven months have passed since the Ohio Supreme Court remanded the case back to the commission, after that

SUB-CYCLE

The MASTER Ringing Converter



NO MOVING PARTS

• • •

30 DAYS' FREE TRIAL

• • •

Output 20 Watts, 90 Volts
Operates on 110 Volts A.C.
Equipt with Pulsator for Biased Ringing.....$55.00

PRICE $45.00

(For loads 40/50 watts, write for information about Model "C.")

LORAIN PRODUCTS CORPORATION, LORAIN, OHIO

Lorain Products Corporation is exclusive manufacturer for use and sale in United States. Address foreign inquiries to Automatic Electric Sales Co., Ltd., Chicago, Ill.

SOLD BY LEADING DISTRIBUTORS

The Latest Book!

"Inductive Coordination of Electric Power and Communication Circuits"

by LAURENCE J. CORBETT

Member, American Institute of Electrical Engineers, Fellow, American Association for the Advancement of Science

is the **only one** combining under one cover the essentials of this important subject involving many divisions which have been treated separately and occasionally in numerous reports and articles. It includes results of the author's researches, fitted into a broad survey of the principles applying to Inductive Coordination. It is NOT a compilation of catalog data or undigested reports. It is a carefully developed treatment and clarification of a subject which, though important, has received too little attention. Many diagrams illustrate the practical application of the principles in a manner very readily followed. The variation in values of factors is presented, and theory and practice under these conditions are carefully differentiated.

CHAPTER HEADINGS:

I. Elements of the Problem.
II. Susceptiveness and Coupling Factors.
III. Effects of Conductor Arrangements.
IV. Transpositions.
V. Coordinated Transpositions.
VI. Telephone Circuits on Power Structures.
VII. Power System Wave Shape.
VIII. Transformer Exciting Current and Bank Connections.
IX. Flow of Residual Currents.
X. Control of Residuals.
XI. Miscellaneous Values and Remedial Measures.
XII. Susceptiveness Factors.
XIII. Low Frequency Induction.
XIV. Miscellaneous Methods.

Appendices • Bibliography • Index

Price: $3.00

TELEPHONY PUBLISHING CORPORATION
608 S. DEARBORN ST., CHICAGO
Telephone WABash 8604

tribunal had received it back from the United States Supreme Court which questioned the methods of the commission in its valuation of the telephone company's property on which it based its order in 1934 directing the company to make a refund of $11,832,000 to its subscribers in 46 Ohio cities and towns.

September 28, 1937, was the date set by the commission for the opening of the rehearing of the case, but at that time the attorneys for the company and those representing the attorney general's office were unable to agree on a method of procedure. This involved whether or not an attempt should be made to arrive at a valuation of the company's property, by taking the property as a whole, or to reach the same end by ascertaining the valuation of each of the company's exchange properties.

Up to January 18 the attorneys for both sides had still not reached any agreement and the date for the hearing was again postponed indefinitely. In the interim, various conferences had been held at some of which it is said there were discussions as to a possible settlement of the case on a compromise basis.

Rumors of a compromise have been set aside by the statement of Randolph Eide, president of the Ohio Bell, who denies that any offer of settlement has been made by the company. He declared it is the function of the public utilities commission "to study further the evidence and testimony in the case and to issue an order accordingly" when the principles involved are agreed upon.

The latest postponement of the case by the commission was made at the request of the attorneys for both sides, indicating they were not prepared for the rehearing and that they would continue negotiations intended to eliminate any involved technical testimony

Not only has this failure to reach an agreement served to delay the rehearing of the case, but another reason advanced is that Attorney General Duffy lacks sufficient funds for the employment of engineers and accountants to revalue the company's property, and to recheck its revenue and cost records.

A bill to appropriate $100.000 for this purpose is now pending before the special session of the legislature.

▼ ▼

Pennsylvania Long Distance Rates Cut

The Pennsylvania Public Utility Commission ordered the Bell Telephone Co. of Pennsylvania, on January 17 to reduce its charges for long distance calls within the state. Long distance tariff schedules, the commission said, must conform with those of the American Telephone & Telegraph Co., which handles interstate calls. In eliminating the disparity, the commission effected an estimated saving of $600,000 a year for Pennsylvania business men.

The commission made the rule absolute. The revision is to apply to all rate charges in excess of 10 cents.

The commission said that prior to January 15, 1937, when the A. T. & T. slashed its rates, the interstate and intrastate rates for comparable distances were identical. The Pennsylvania Bell company did not institute comparable reductions, however.

As a result, the commission maintained, one could call from Harrisburg to Camden for 55 cents, but the charge from Harrisburg to Philadelphia was 60 cents.

Similarly, a call from Pittsburgh to Philadelphia cost $1.15, while one from Pittsburgh to Camden cost only $1.

The commission issued a ruling against the Bell company to show cause why its charges should not conform to those of the A. T. & T. The final hearing was held January 10.

▼ ▼

Oppose Connection with Privately-Owned Systems

Operation of privately-owned switchboards connected with the lines of major telephone companies would violate provisions of the interstate commerce laws and regulations of the Federal Communications Commission, counsel for the Bell Telephone Co. of Pennsylvania informed the Pennsylvania Public Utility Commission on January 20 in Philadelphia.

The argument of the telephone company was made during hearings conducted by the commission on the legality of allowing private business men to establish inter-office telephone service independent of the telephone companies, but connected with the facilities of the companies.

Supporting the proposal for privately-owned switchboards was McCloskey & Co., contractors of Philadelphia, headed by Matthew H. McCloskey, Democratic co-leader of Philadelphia.

Benjamin O. Frick, counsel for the Bell company, described the establishment of private switchboards not owned by the telephone company as an unlawful interference with its business, as a violation of interstate commerce laws. In substantiation of his contention he referred to the large volume of interstate toll calls made over the Bell System to and from Pennsylvania.

Through Albert H. Osterman, assistant vice-president of the Pennsylvania Bell company, Mr. Frick brought out that in 1937 there were more than

SANDS

TYPE 40 PROTECTED CABLE TERMINAL

A compact, small-capacity unit arranged for pole or wall mounting. The reversible zinc cover allows cable to be led from top or bottom. Each pair of protectors consists of two Type 17, 5-ampere wood fuses and two Type 2105 discharge blocks. Available in capacities of 3, 5 and 7 pairs. Information on this and other Sands protective equipment gladly supplied upon request.

SANDS PROTECTION EQUIPMENT
is made by:

AUTOMATIC ELECTRIC COMPANY

Distributed by:
AMERICAN AUTOMATIC ELECTRIC SALES CO.
1033 West Van Buren Street, Chicago

Export Distributors:
AUTOMATIC ELECTRIC SALES COMPANY, LTD.
Chicago

30,000,000 interstate toll calls, both from and to points in Pennsylvania.

Mr. Osterman fixed the total book cost of the Bell System in the state at $314,094,257. The value of telephones in the hands of subscribers was placed by him at $49,825,843.

J. E. Murdock, chief engineer for the eastern division of the Pennsylvania Bell company, testified on January 21 against allowing private telephone apparatus on company lines.

Answering the request of McCloskey & Co. for private switchboards and phones in its offices at 1620 Thompson St., Philadelphia, Mr. Murdock said the dual responsibility of the connection would "upset the entire Bell System."

"Seventy-five per cent of our trouble is in office and home apparatus," he said. "If that apparatus is of inferior grade and not our own, we would have great inconvenience straightening out any trouble, and the whole standard would be lowered."

▼ ▼

Tennessee Rate Hearing Continued to January 25

The hearing before the Tennessee Railroad & Public Utilities Commission in its investigation of the rates of the Southern Bell Telephone & Telegraph Co. was adjourned January 15 until January 25. The investigation was inaugurated with a view to reducing rates approximately $800,000 a year.

Attorneys for the commission and the Southern Bell requested a continuance of the hearing to allow time to study the testimony in an effort to cut it short and terminate the inquiry within two weeks.

At the January 11 hearing much testimony was presented concerning the telephone earnings in the state's four largest cities—Memphis, Chattanooga, Knoxville and Nashville.

The Southern Bell made a net profit of $663,330 in Memphis in 1936, it was brought out. The Memphis profit represented a return of 6.4 per cent, according to figures presented by the company. This compared with $493,349 or 6.48 per cent for Nashville; $335,126, or 6.79 per cent for Chattanooga, and $322,753, or 7.35 per cent for Knoxville.

Other company exhibits showed that Knoxville has complete dial installation and Chattanooga about 90 per cent dial, while Memphis and Nashville are only 50 per cent converted to the dial system.

The company claimed that lower operating expenses and fewer employes because of dial operations reduced expenses in Knoxville and Chattanooga, resulting in higher profit there.

The state's four big cities produce 90 per cent of the telephone company's revenue in Tennessee from its 141 exchanges, it was brought out by W. A. Roberts, attorney for the utility commission, in cross questioning of R. R. Stubbs.

Mr. Stubbs' report said the four cities have 80 per cent of the company's claimed investment and accrue 74 per cent of its claimed operating expenses. The report said 92 of the exchanges in the state each having less than 250 telephones showed a loss of 1.5 per cent in 1936 while exchanges in the larger towns and cities showed 6.5 per cent or more profit.

MONEY

By MISS ANNE BARNES

Traveling Chief Operator, Iowa Independent Telephone Association, Des Moines, Iowa

A SMALL BOY'S mother gave him two nickels, one for the church collection and the other for candy. As Johnny walked along with his younger brother, in order to show off, he tossed the coins into the air and caught them until, suddenly, one coin fell and rolled into a sidewalk grating.

"Oh, Jimmy," he shouted, "That was the *Lord's* nickel." Johnny was a quick thinker.

Money frequently does queer things to people. And often with very small beginnings, so small that the right or wrong is most obscure as in Johnny's case. But he lost something that any amount of money cannot buy—*honesty*, and over a very small item.

We often hear the remark: "If I wanted to steal, it would be for thousands of dollars instead of a small item."

Johnny was not dishonest at heart. He was just a quick thinker in his own favor.

Some of our most wealthy people have prospered at the expense of other folks. They have become quick thinkers for themselves, in a large way, and left others "holding the sack."

The possession of mere dollars—as dollars—does not buy happiness; whether we possess many of them or just earn a given amount weekly or monthly we can use but a moderate sum for food, clothing, shelter—life's necessities, and a margin for entertainment.

In the final analysis, it is what we *make money do*. According to the late Marshall Field, one of the world's greatest merchants, "The greatest good a man can do (with money) is to cultivate himself, develop his powers, in order that he may be of greater service to humanity."

Some of you may be thinking, "Oh, that may be easy for a rich man like Marshall Field, who had dollars galore with which to cultivate himself and develop his powers in order to render a greater service to humanity; but what opportunities have I to do much cultivating of self or developing powers to aid humanity, on my small salary and working day after day at a switchboard?"

Suppose you look at it this way: You come closer to the rich and poor alike in your daily administration of personal service than wealthy men can ever hope to do. They have to inject the personal spirit into their service to humanity, whereas *you give it out from within.*

So let us leave the giving to humanity of life's extras to the wealthy men, so inclined, and we will go on rendering our many little personal services to our customers, feeling happy that our stepping-stone services help folks in their every-day affairs.

POLES

B. J. Carney & Co., 100 N. 7th St., Minneapolis, Minn.—Western red cedar poles. Pentrex Butt Treated or Plain.

International Creosoting and Construction Co., Galveston, Texas.—Creosoted Southern Yellow Pine Poles. Plants: Beaumont and Texarkana, Texas.

MacGillis & Gibbs Company, Milwaukee, Wis.—Northern White and Western Red Cedar Poles. Plain or butt-treated. Immediate quotations on request.

T. M. Partridge Lumber Co., Minneapolis, Minn.—Northern White—Western Red Cedar Poles. Plain or butt-treated.

H. Sigalet & Company, Ltd., Lumby, B. C., Canada—Western Red Cedar Poles. Plain or butt-treated.

Valentine Clark Corporation, 2516 Doswell Ave., St. Paul, Minn.—Finished Cedar Poles. Plain or butt-treated.

LOOMIS ADVERTISING CO.
TELEPHONE DIRECTORY ADVERTISING
A SALES ORGANIZATION EXCLUSIVELY
TELEPHONE BLDG. KANSAS CITY, MO.
CITIZENS TRUST BLDG. FT. WAYNE, IND.
135 S. SECOND ST. PHILADELPHIA, PA.

Consulting Telephone Engineer
"Modernization of Equipment and Methods for Improved Service"
GARRISON BABCOCK
1104 Third Avenue, Seattle, Washington

JOHN C. LARKIN & COMPANY
Consulting
Accountants and Engineers
Specializing in a Professional Service to Telephone Utilities Covering the Field of Accounting and Engineering
Chamber of Commerce Building
Syracuse, New York

Frank F. Fowle & Co.
Electrical and Mechanical ENGINEERS
35 East Wacker Drive CHICAGO

COFFEY SYSTEM
Exclusive Telephone Accountants
Systems Installed
Audits and Special Services
CENTRAL ACCOUNTING DEPARTMENT
Lemcke Bldg., Indianapolis

The afternoon session was enlivened by a tilt between Commissioner Jourolmon and telephone company attorneys.

An intimation from Commissioner Jourolmon that the company had been able to persuade the state hotel association to drop its complaints on high rates through increased concessions, brought a statement from J. H. Baker, Southern Bell state manager, that there had been no such concessions in rates.

At the January 13 session John H. Bickley, former FCC chief accountant in the Bell telephone investigation and now rate expert for the Tennessee commission, testified that the property of the Southern Bell in the state could be reproduced for $25,800,000 instead of the $37,946,000 valuation set by the company. He placed the present "real book cost" of the property at $27,800,000. Mr. Bickley was on the witness stand all day January 13 and was cross-examined the following day by the company counsel.

▼ ▼

Summary of Commission Rulings and Hearings

Federal Communications Commission
Washington, D. C.

January 10: Mountain States Telephone & Telegraph Co. granted authority to supplement its existing facilities by constructing on an existing pole line one pair of 104 mil. copper wires between Winslow, Ariz., and Gallup, N. M., a distance of approximately 131 miles.

January 11: Oklahoma-Arkansas Telephone Co. denied a motion to strike answer of respondent, Southwestern Bell Telephone Co., to amended complaint in Docket No. 3796. It was decided to hold the hearing in the case in Washington, D. C.

January 18: Ordered that the order of the FCC entered at a meeting held December 21, 1937, wherein the application of the Nebraska Continental Telephone Co., Columbus, Neb., was set for hearing before an examiner on January 26, 1938, be rescinded.

January 18: Order issued granting Russell J. Hopley authority to hold positions as vice-president and director of the Northwestern Bell Telephone Co., Tri-State Telephone & Telegraph Co., and Dakota Central Telephone Co.

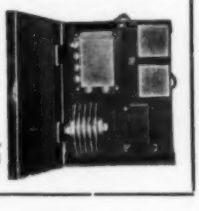
February 28: Hearing in Washington, D. C., on complaint of the Oklahoma-Arkansas Telephone Co., Poteau, Okla., against the Southwestern Bell Telephone Co., (Docket 3796) requesting relief under the Communications Act of 1934.

The Oklahoma-Arkansas Company is

PLANT ENGINEERING and CONSTRUCTION
Building and Rebuilding Telephone Plants
Consultation Services
Wiring Jobs, Installations, Switchboard Alterations
Expert Consultants on All Telephone Problems
National Construction & Engineering Company
1031 West Van Buren Street
CHICAGO

Telephone Securities Corporation
120 So. La Salle St. Chicago, Ill.
Telephone Franklin 0181
Underwriters and distributors of securities of Independent telephone companies
Inquiries invited

NOW—ELECTROX Current Supply Unit for operator's sets at a new low price — $14.85. No batteries needed.
Sent on Trial
Schauer Machine Co.
2060-2068 Reading Road
Cincinnati Ohio



ACCOUNTING
HERDRICH and BOGGS
Certified Public Accountants
803 Electric Building
INDIANAPOLIS, IND.

TELEPHONY ADVERTISERS
will give you service which will be pleasing

ECONOMICAL
BURGESS TWIN-SIX BATTERY
Burgess Battery Co., Freeport, Ill.